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CONTENTS

BULGARIA

Party Official Calls for Better Management of Economy (Krustyu Trichkov Interview; IKONOMICHESKI ZHIVOT, 29 Oct 80) ... 1

Ordinance Regulates Customs Inspections, Duties on Parcels (DURZHAVEN VESTNIK, 17 Oct 80) ... 7

Development of Agrarian Economy Since 1944 Reviewed (Nikola Palagachev; SPISANIE NA BULGARSKATA AKADEMIYA NA NAUKITE, No 4, 1980) ... 31

Results of Coal Reserves Studies Discussed (Yovcho S. Yovchev; SPISANIE NA BULGARSKATA AKADEMIYA NA NAUKITE, No 4, 1980) ... 42

CZECHOSLOVAKIA

September 1980 Economic Results Summarized (HOSPODARSKE NOVINY, 31 Oct 80) ... 59

CSSR Official Sees Uranium as Prime Energy Source (Milan Povolny, Vladislav Novy; HOSPODARSKE NOVINY, 31 Oct 80) ... 64

GERMAN DEMOCRATIC REPUBLIC

Energy Seminar Urges Greater Conservation Measures (PRESSE-INFORMATIONEN, 21 Oct 80) ... 70

Energy Conservation Achievements Reviewed, Prospects Outlined (Wolfgang Rauchfuss; EINHEIT, Oct 80) ... 87

POLAND

Economic Reform on Hungarian Model Considered Inadvisable (Jan Mujzel Interview; KURIER POLSKI, 19-21 Sep 80) ... 91

Long-Range Fertilizer Production, Utilization Outlined (Lech Froelich; ZYCIE GOSPODARCZE, 26 Oct 80) ... 98

PARTY OFFICIAL CALLS FOR BETTER MANAGEMENT OF ECONOMY

Sofia IKONOMICHESKI ZHIVOT in Bulgarian 29 Oct 80 pp 1, 6-7

[Interview with Krustyu Trichkov, candidate member of the BCP Central Committee Politburo, deputy chairman of the Council of Ministers and chairman of the Committee for State and People's Control: "For Active and Aggressive Control Activities"]

[Text] The forthcoming 12th Party Congress is an important event in the life of the party, the people, and the country. On this occasion Comrade Krustyu Trichkov was asked by the editors some questions related to the work of the control organs and economic cadres in the period preceding the 12th BCP Congress.

Question: Comrade Trichkov, how do you assess the role of the forthcoming highest party forum in terms of the further development of our economy?

Answer: Each party congress is a new step in the building of a developed socialist society in our country. Unquestionably, the 12th Party Congress will play an exceptionally important role in the development of our socialist economy. Comrade Todor Zhivkov himself has emphasized that, "It would be no exaggeration to say that the 12th Congress will mark a period of deep quality changes in the development of the Bulgarian socialist economy."

First, the congress will supply a decisive impetus to the practical implementation of our course for high effectiveness and quality.

Second, ripe and major problems of our development will be formulated and resolved, such as the systematic application of the new economic approach and new economic mechanism in the organization and management of the national economy, and a decisive upgrading of social labor productivity; the rapid and energetic application of the highest modern achievements of the scientific and technical revolution and of global experience; and raising agriculture to a new level of development.

It is on this solid foundation that the 12th Congress will confirm the party's course of further enhancement of the living standard of the people and the ever fuller satisfaction of their material and spiritual needs. The congress will earmark important practical measures for the implementation of the December party program, particularly in the production of more consumer goods, trade improvements, self-satisfaction of settlement systems, and others.

Question: Recently the July BCP Central Committee Plenum reviewed the implementation of the basic indicators of the Seventh Five-Year Plan in the economic and social policy areas. What are the positive and negative sides of this balance?

Answer: The results achieved by our people under the party's guidance in the Seventh Five-Year Plan indicate that a new major forward step was taken in the socioeconomic development of the country. Thanks to the selfless work of all working people in our country a stable rate of increase of the national income and of the overall development of the country was achieved. This was accomplished despite the rather complex circumstances created by the energy-raw material and monetary crisis of capitalism.

The results achieved in the Seventh Five-Year Plan make us legitimately proud not only of our economic accomplishments, which created a solid foundation for the further implementation of the December program for upgrading the living standard of the people, but in the areas of foreign economic relations, stabilization of our foreign exchange balances, and others.

At the same time, dissatisfaction with current results and with new creative searches was expressed at the July plenum. It was pointed out that these achievements did not constitute the limit of our economy and our socialist economic system, and that the possibilities were far greater. We must acknowledge that in virtually all national economic sectors the contradiction between the possibilities of the developed material and technical base, tremendous in terms of our scale, and its insufficiently efficient utilization by the subjective factor, determined at the 11th Congress and analyzed at the July 1976 BCP Central Committee Plenum, has not been surmounted yet.

The problem is easy to understand. We still have a number of economic units whose managements allow in their work substantial weaknesses of a most different nature: unjustified idling of machines and equipment, poor organization of the work, violations of technological and labor discipline, and many other reasons, all of them subjective. This situation is intolerable and, naturally, being conscientious creative workers, we cannot tolerate it.

Question: On what aspects of the nationwide pre-congress competition should we focus our greatest attention?

Answer: The 12th Party Congress will offer broad scope for the initiative and energy of the party organizations, party members, cadres, public, economic and cultural organizations, and working people in their competition which is already covering all areas of material production and all activities in the country.

Comrade Todor Zhivkov pointed out two particularly important aspects of this pre-congress competition:

First, the struggle for the fulfillment and overfulfillment of the 1980 counterplan. Those who resolve this problem most successfully will welcome the congress in the best possible and most worthy manner.

Second, on this basis, insure the ever fuller satisfaction of the material and spiritual needs of the common people, of all working people. Concern for man will remain the basis of the party's policy and the most immediate concern of party, state and economic managements. We must decisively implement the tasks we have set ourselves.

Something else which was particularly emphasized by Comrade Todor Zhivkov is that in the struggle for properly welcoming the congress, "Action is the main thing! Not noise but action, not big words but specific practical results! Actions, actions and actions again!"

The reason I am voicing these considerations in particular is because they are profoundly meaningful and fully apply to all economic cadres.

Question: Comrade Trichkov, it is common knowledge that one of the factors for the successful functioning of the entire economic mechanism and the implementation of the plans is control, socialist control in particular. What is the place assigned to the control system in the preparations for worthily welcoming the 12th Party Congress?

Answer: The organs in charge of overall socialist control are among the most typical traits of the democratic nature of our society. They are the offspring of socialism and the attribute of the socialist state. The state and people's control organs are one of the effective means for exercising daily control over all aspects of the work of state and economic organs, enterprises and organizations by workers, peasants, and the intelligentsia, and of their right to do so. Over 220,000 people's controllers, members of public organizations, men of science and culture, workers, peasants, and employees are working on a voluntary basis within the effective system of the state-public organization of state and people's control organs.

The people's control commissions and groups have become the basic mass support of the state and people's control organs.

The people's controllers are fighting violations with an unerring inner sense of justice. The activities of the people's control commissions are so comprehensive that they have grown into a self-control system, into an individual and mass self-imposed obligation. Their comprehensive activities which are currently particularly actively manifested in the pre-congress competition are an expression of experience directly based on reality. It proves the inexhaustible possibility of the people's masses to be creative even in an area such as control. That is why the dedicated work of the people's controllers is deservedly highly rated by our party. Ninety-four active and properly working people's control commissions in economic organizations, large enterprises, and establishments were reorganized into state and people's control committees based on production activities. This considerably broadened the right of control and of holding accountable control organs immediately responsible for the work of labor collectives.

Naturally, this alone does not cover the entire democratic and voluntary principle of control work. The close interaction between the Committee for State and People's Control and the people's controllers, on the one hand, and the public organizations, the Fatherland Front, the Bulgarian Trade Unions, the Komsomol, the women's councils, and others, on the other, is a powerful factor in the manifestation of the broadly democratic principle governing control activities.

Question: Comrade Trichkov, the Law on State and People's Control offers real possibilities for the exercise of the citizens' right to control the work of the state apparatus and the socialist organizations. How are such opportunities used?

Answer: Let me clearly state that not all possibilities are used. For example, the law grants substantial rights to the people's control commissions to check, suggest to and demand of the administrative and economic managers to explain to the collectives the specific measures they have taken to eliminate some shortcomings and weaknesses. This is not implemented always and everywhere. The role of the people's control commissions has been lowered in some ministries and economic organizations. Far from everything possible has been done to make use of the potential of this mass support of people's control and to enhance the role and prestige of such commissions.

The Law on Suggestions, Reports, Complaints, and Petitions submitted by the working people was passed also for purposes of improving and democratizing social management. It assigns tasks to all control organs and all departments. The implementation of this law must be considered a legal act of great political importance. According to the law all work related to suggestions, reports, complaints and petitions to be the direct responsibility of ministers and managers. This is properly understood in many places. However, in a number of areas this is not being understood and this work is assigned mainly to the heads of the respective services. Work with letters sent by citizens is still being underestimated.

Another basic stipulation of the law is violated as well according to which all managers must set aside specific receiving days and hours. We are pained to admit that some managers find no time to see citizens and settle their problems.

We believe that the Committee for state and people's control and the other control organs are still not making use of their great potential for improving the state apparatus and its work--for reducing its size, eliminating callousness, bureaucracy and formalism, and improving work style and methods.

Today, in the active pre-congress efforts of all working people in our country, the control organs must find their proper place and role in the struggle against bureaucracy, formalism and callousness. We must not forget that the July 1980 Party Committee Plenum pointed out once again that we must openly confront the carriers of such phenomena and the violators of state discipline regardless of rank and position.

We have always ascribed great importance to the educational function of control based on the understanding that the main aspect of control is not to punish but to play an educational and preventive role. Today, in the stage of building a developed socialist society, this becomes even more necessary. In this spirit I believe that with a view to intensifying the educational functions of control the results of each investigation and of established violations must be made available to the corresponding collectives. Weaknesses and their carriers must be exposed promptly. On the other hand, all the opportunities offered by the public organizations and mass information media extensively to publicize investigation results must be used. Publicity could greatly enhance the preventive aspect of control. In this spirit the leadership of the Committee for State and People's Control highly values the role and significance of the joint initiative sponsored by the committee and by IKONOMICHESKI ZHIVOT of publishing materials under the heading of "Under the Control of the People."

Nothing undermines the foundations of what is base and immoral better than their public exposure and shaming. Frequently a violation, a crime is committed behind the people, stealthily, secretly. Publicity exposes it to the light. It becomes known by the masses, public intolerance develops, and a moral educational reaction is triggered. That is why an investigation and its results must be made public at all levels in posters, exhibits, displays, letters, wall newspapers, pamphlets, flash announcements, enterprise newspapers and radio broadcasts, and the local and central press. The violators must be publicly exposed at every step. This will greatly contribute to the enhancement of moral norms and to better behavior. It would enable us to eliminate negative features such as lies, thefts, egotism, greed, consumerism, gross selfishness, and careerism. In the final account, these are the sources of actions with adverse consequences in terms of public property.

Finally, allow me through IKONOMICHESKI ZHIVOT to mention some of the most topical problems which are being resolved by the control system now, in the period preceding the 12th Party Congress. Above all, the state and people's control organs and the entire control system must focus their efforts and attention on the implementation of the 1980 counterplan in all sectors, for all quality indicators, and in physical terms. In this area we will continue to pay particular attention to the timely harvesting and most efficient utilization of agricultural commodities.

Another exceptionally important problem requiring investigation is that of the proper utilization of raw materials, materials, energy and fuels, manpower resources, and equipment. This mass investigation would enable us to hold accountable anyone who has adopted a formalistic attitude toward this problem of exceptional importance to our economy and development.

The task set by the July plenum of producing additional consumer goods worth 550 million leva, whose implementation is being investigated, is very important from the economic viewpoint.

Major problems must be resolved in the field of transportation with a view to the development of a most efficient organization for the utilization of the rail, road, and water transport systems.

In the field of construction an extensive investigation must be made on the accelerated commissioning of productive capital planned for the Seventh Five-Year Plan and reduce the volume of unfinished construction by 20 percent.

The investigation underway, involving the entire control system, of the application of new technologies and of the requirements of the new economic approach in the formulation of the 1981-1982 plan for the socioeconomic development of the country--years within the new five-year plan, the five-year plan of technical progress, production intellectualization, and comprehensive and full application of the new economic approach, a five-year plan of sharply increasing labor productivity and raising the living standards of the Bulgarian people--is of exceptional importance.

As you may see, these are merely some of the major and responsible tasks facing the control system. Unquestionably, more than at any other time, today we need a militant, an aggressive control activity and an open confrontation with all violators of discipline and all manifestations of disorganization and slackness, regardless of their origin or their agents.

As always, the control organs today are responding to the party's call for worthily welcoming the 12th BCP Congress. Unquestionably, they will remain in the leading ranks of the struggle for its worthy welcoming, in the struggle for building developed socialism in our country--the Bulgarian People's Republic.

5003
CSO: 2200

ORDINANCE REGULATES CUSTOMS INSPECTIONS, DUTIES ON PARCELS

Sofia DURZHAVEN VESTNIK in Bulgarian 17 Oct 80 pp 997-1007

[Ministry of Finance Ordinance No 5 on customs control of international parcels]

[Text] Chapter 1

General Stipulations

Article 1. (1) The present ordinance regulates customs control of mail parcels sent abroad or received from foreign countries by local residents and foreigners residing in our country with the exception of the ones stipulated in the following paragraph.

(2) Customs control of parcels received or sent by foreigners enjoying diplomatic immunity on the territory of the Bulgarian People's Republic shall be based on the stipulations of the Ordinance On Customs Handling of Baggages and Parcels Imported or Exported by Foreign Missions and Their Personnel (DV, No 71, 1970; amended, No 58, 1971 and No 69, 1978).

(3) Parcels containing mail alone shall not be subjected to customs control.

Article 2. (1) The postal administration shall deliver to the addressees parcels received from abroad and shall accept parcels to foreign countries only by permission of the customs office, insuring the necessary conditions for customs control.

(2) The permission of the customs office shall not be required in the case of mail correspondence and whenever the postal administration has been assigned by the minister of finance to perform customs duties with the agreement of the minister of communications.

(3) All activities related to the handling, transportation and storage of international mail parcels shall be carried out by the postal administration in accordance with Ordinance No 4 on postal communications (NPS) (DV No 97, 1979), and in accordance with the present ordinance.

(4) Postal employees shall open the parcels under the supervision of customs officials and submit for checking by customs of the objects they contain. They shall measure, count and replace the objects in the parcels.

Article 3. (1) Customs control of international parcels shall be provided by the customs offices in the country in their individual areas (Appendix No 1) through a customs investigation of the content of the parcel and control of the documents accompanying it.

(2) Customs officials shall set the customs fees for international parcels unless such activities have been assigned to postal workers as per the Regulation On the Application of the Law on Customs (PPZM) (DV, No 12, 1975; amended and supplemented, No 49, 1978).

An official document shall be drawn up in accordance with the stipulations of the NPS in the following cases: discrepancy between the objects included in the international parcel and their description in the customs declaration; a parcel not accompanied by a customs declaration; damaged wrapping; or spoiled or damaged objects in the parcel.

(4) Should it be determined that the parcel contains objects whose import or export is forbidden and which are not listed in the accompanying documents, or else that the parcel contains objects placed in such a way as to avoid customs control, a document is drawn in accordance with the stipulation of the Law on Customs (ZM).

Article 4. (1) Objects for individual or family use may be sent or received with international parcels in accordance with the stipulations of the ZM, the PPZM and the present ordinance, and in accordance with the requirements of the border veterinary-sanitary and phytosanitary control.

(2) The export or import from and to the Bulgarian People's Republic of items listed in Section I of Appendix No 2 is prohibited.

(3) Items listed in Section II, Appendix No 2, may not be exported duty-free with the exception of the stipulated cases.

(4) The systematic sending and receiving of international postal parcels by the same individual is prohibited. Receiving (sending) more than one parcel quarterly shall be considered systematic.

Article 5. (1) The stipulations of the NPS and the Universal Postal Convention shall be observed in terms of the type, packaging, size, weight, addressing and franking of international postal parcels.

(2) The postal administration shall bear material responsibility for the loss, theft or damaging of international postal parcels in accordance with the cases and stipulations of the NPS.

Chapter 2

Customs Control and Fees Levied on International Postal Parcels

Section I

Importation

Article 6. (1) International postal parcels arriving from abroad to border exchange points shall be sent to the exchange postal station of the Sofia customs office with a transportation sheet issued at the border customs office on the basis of a description drawn up by the postal service.

(2) The transportation sheet shall be drawn up in two copies. One copy shall be kept by the customs office while the second shall accompany the parcel to the exchange postal station of the receiving customs office which shall initial it and return it to the issuing customs office.

Article 7. (1) The exchange postal station at the Sofia customs office shall distribute the international postal parcels for the levying of customs fees among the customs offices of the rayons listed in Appendix No 1 and ship them to the corresponding post offices of the settlements where such customs offices are located.

(2) Customs control over small parcels bearing a rhombic-shaped seal on the packaging, arriving from countries signatories of the 30 May 1963 protocol on one-sided customs control of small packages (GDR, Poland, USSR, Hungary, Czechoslovakia) shall be provided by the Sofia customs office of the Sofia Central Post Office, after which they shall be sent directly to the post offices of their destination to be delivered to the addressees in accordance with the NPS.

(3) Small packages with a rombic seal are not subject to customs control. The customs office may control such parcels for sanitary, veterinary, or other non-customs security control reasons or should small parcels be systematically received by the same individual.

Article 8. (1) The postal services shall submit to customs offices arrived international postal parcels with a description of the contents in two copies in accordance with NPS procedures, together with shipping receipts and customs declarations accompanying the parcels.

(1) One copy of the description shall be kept by the customs office while the other with the shipping receipts and customs declarations shall be returned to the postal service.

Article 9. (1) In the case of international parcels containing items subject to custom fees the following documents shall be issued in duplicate: import receipt, when the fee is collected by the customs office, or a postal customs duty document, when it is collected by the post office.

(2) The receipts (post office documents) shall contain a description of the items by type, quantity and value; they shall indicate shipment stipulations and the duty to be charged.

(3) One copy of the import receipts or postal document shall be sent by the postal administration to the addressee who must appear and pay the customs fee either directly at the customs office should it be located in the same building as the exchange post office or at the post office in all remaining cases.

Article 10. (1) Should the international postal parcels contain duty-free items the shipment report must be processed by the customs office.

(2) Following the delivery of the parcels to the addressees the reports shall be submitted to the customs office for filing as customs documents.

Article 11. (1) The actions of customs officials related to the levying of customs fees on international postal parcels may be appealed to the head of the corresponding customs office prior to the delivery of the parcel to the addressee.

(2) The petition shall be presented directly to the customs office or through the post office where the parcel is located. The addressee shall be given the possibility to check the content and customs fees in the presence of a post office official. Should the complaint be filed at the post office, it should be sent, together with the parcel and the post office document to the customs office which levied the customs duty.

(3) The customs office chief shall appoint a review commission as per Article 81 of the PPZM, after which the parcel and the customs duty document on whose reverse side the results of the second review has been entered, shall be returned to the corresponding post office for collection of the duty owed and for delivery of the parcel to the addressee as per the NPS.

(4) Customs fees may be appealed to the Customs and Customs Control Directorate of the Ministry of Finance. The appeal must be submitted to the customs office no later than seven days following receipt of the announcement of the fee charged and before delivery of the parcel to the addressee.

Article 12. Undelivered international postal parcels shall be delivered to the customs offices as per Article 69 of the PPZM and treated in accordance with Articles 101 and 102 of the PPZM.

Section II

Exportation

Article 13. (1) Customs processing of international postal parcels shipped out of the country shall be carried out with customs declaration form S2/SR3 for mail parcels (Appendix No 3) or label S1 for small parcels (Appendix No 4).

(2) The declaration and the label must be filled by the senders, indicating precisely the type, quantity, and value of exported items on the basis of Bulgarian retail prices.

Article 14. (1) Citizens may send parcels abroad through all postal stations with an export permit which may be issued by: the chief of any customs office; the chief of any post office, should the value of the content be no more than 30 leva Bulgarian retail prices. In bigger customs offices or post offices an export permit may be issued by a specially assigned official.

(2) The permit shall be issued in writing: On customs declaration S2/SR3 for mail parcels; on label S1 and the wrapping for small parcels.

(3) Customs declaration form No S2/SR3 shall also include the number, date and amount of the collection order showing that export fees have been collected.

(4) The declaration shall be attached to the report on the shipment of the parcel and kept by the control office of the Sofia customs office.

Article 15. The wrapping of small parcels the value of whose content does not exceed 30 leva, shipped to countries signatories of the 30 May 1963 protocol on a one-sided customs check of small parcels shall mandatorily carry the rhombic seal stamped by the local customs office for small parcels accepted by post offices in settlements with a customs office or by the Soviet customs office for all small parcels accepted by post office settlements without a customs office.

Article 16. (1) Accepted parcels with their accompanying documents shall be shipped to the international exchange post office of the Soviet customs office as per NPS procedure.

(2) Customs control of international postal parcels accepted for export by post offices throughout the country shall be provided by the Sofia customs office which, in cases of doubt, shall recheck the content of the parcels.

(3) Postal parcels received by the Sofia customs office without a customs declaration or with an improperly filled customs declaration shall be returned to the initial post office for proper completion.

Article 17. International postal parcels shall be shipped to the border customs offices together with a customs sheet issued by the internal customs office on the basis of the description list drawn up by the exchange post office.

Section III

Transit

Article 18. (1) The transit shipment of international postal parcels across the territory of the Bulgarian People's Republic shall be allowed providing that the parcels do not contain objects prohibited by the Universal Postal Convention or other international treaties or legal documents.

(2) International postal parcels containing objects whose import in the Bulgarian People's Republic is forbidden may be hauled in transit only by permission of the customs office chief.

Article 19. (1) Customs control of transit international postal parcels shall be based on documents.

(2) Bags with transit international postal parcels as well as the parcels themselves shall be passed by the customs offices entering or leaving the country without being opened and without the breaking of foreign seals.

(3) The following shall be subjected to customs control: In cases of justifiable doubt that the content does not correspond to the accompanying documents; should the packaging be damaged or should its appearance lead to the assumption that its content has been damaged.

(4) The opening of the bags or the parcels themselves as stipulated in the preceding paragraph shall be conducted jointly by customs and post office officials. The results of the investigation shall be entered in a document one copy of which shall remain in the customs office while the second shall be delivered to the postal service.

Article 20. (1) International postal parcels shall be accompanied by a transit sheet issued in duplicate by the customs office at the point of entry on the basis of international postal documents and the post office descriptions drawn up by the postal service.

(2) The customs office at the point of exit shall check the condition of the wrapping and the seals and number of bags. Should they correspond to the entries in the transit sheet, the bags shall be passed through customs. The customs office shall initial the transit sheet and return it to the customs office at the point of entry.

Chapter 3

Duty-Free Imports and Exports

Article 21. (1) No duty shall be levied on the following:

1. Parcels whose content is worth no more than 10 leva in Bulgarian retail prices, shipped to local or foreign physical persons;

2. Parcels arriving from socialist countries and addressed to local physical persons, providing that their content is not worth more than 30 leva, Bulgarian retail prices;

3. Small parcels bearing a rombic seal on the wrapping, arriving from countries signatories of the 30 May 1963 protocol on one-sided customs control of small parcels;

4. Parcels received quarterly by members of families of Bulgarian citizens residing abroad for purposes of work, specialization or assignme . for over six months in accordance with the restrictions stipulated in Article 23 paragraph 1 of the present ordinance;

5. Parcels containing food products, clothing, shoes, and other objects for the personal needs of foreign students, graduate student, secondary school students, and others, attending Bulgarian educational institutions;

6. Parcels containing items for the personal and family requirements of foreign specialists working in Bulgarian institutions, enterprises or organizations;

7. Parcels containing local goods regularly shipped abroad, if returned to the country within one year from the date of export and addressed to the exporter or his representative;

8. Parcels containing objects imported on the basis of claims for the replacement of defective goods, shipped free of charge within the period covered by the guarantee;

9. Pacels containing works of art or of science, privately owned by the addressee--a local physical person;

10. Parcels containing moveable property for individual or family use by individuals settling in the country, should they arrive within three months from the date of settlement.

(2) Should the value of the content of the parcel, as per items 1 and 2 of the preceding paragraph, exceed stipulated limits, duty shall be paid on the entire value of the parcel.

(3) No customs fees shall be charged on parcels whose content has become unuseable because of damages or spoilage.

Article 22. (1) No duty shall be charged on the following:

1. Parcels whose content shall be worth no more than 10 leva, Bulgarian retail prices;

2. Parcels sent on a quarterly basis by Bulgarian citizens to members of their families residing abroad for purposes of employment, specialization, assignment, or training exceeding six months in accordance with the restructions stipulated in Article 23, paragraph 2 of the present ordinance.

(2) Should the value of the content of the parcel, as per items 1 and 2 of the preceding paragraph, exceed stipulated limits, duty shall be paid on the entire value of the parcel.

Article 23. (1) Parcels as per Article 21, paragraph 1.4, shall be duty-free should their overall value not exceed 100 leva, Bulgarian retail prices, and should they contain food products, clothing, shoes, and toys for the personal needs of members of the shipper's family located in Bulgaria. Clothing and shoes within a single parcel may not exceed one piece (pair, set) of each type.

(2) Parcels as per Article 22, paragraph (1) 2. shall be allowed to pass duty-free should their overall value not exceed 100 leva and should they contain items

for personal or family requirements. Clothing and shoes within a single parcel may not exceed more than one item (pair, set) of each kind while food products may not exceed a total weight of two kilograms.

(3) Should the content of the parcels as stipulated in the preceding paragraph exceed the stipulated limits, the surplus value shall be taxed in accordance with the Customs Tariff on the Taxation of Goods Imported or Exported by Physical Persons (DV, No 80, 1979).

Article 24. (1) The rayon or other customs offices, as stipulated by the Customs and Customs Control Directorate, shall open files for control over parcels as per Article 23.

(2) Files shall be opened at the request of the interested individuals submitted to the chief of the customs office in the area where the addressee (sender) maintains his permanent residence.

(3) The following documents must accompany the petition for the opening of a file: service note issued by the institution which has assigned the individual to a foreign country; declaration of family status of the employed (the specialist, the assigned individual).

(4) Should the addressee (sender) change his place of residence, the file may be transferred only by permission of the rayon customs office on the basis of a petition submitted in accordance with the preceding paragraphs.

Article 25. (1) In the sense of the presence ordinance the term family shall mean the following: spouse; minor children; children of legal age in the armed forces, full-time secondary or university students, the incapacitated, or individuals declared legally incompetent regardless of age.

(2) Parcels as per Article 22, paragraph (1) 2. may be shipped also by close relatives (children of legal age, parents, brothers, sisters, grandmothers, or grandfathers of either spouse) not considered members of the family in the sense of the preceding paragaph.

Chapter 4

Special Regulations for Sending or Receiving Certain Items

Article 26. (1) Gramophone records and taped recordings may be sent or received after hearing; printed matter must be checked.

(2) The export of manuscripts, negatives, slides, drawings, or photographs for publication in newspapers, periodicals or books, or for participation in exhibits or similar activities shall be allowed by permission of the Committee for Culture--Copyright Agency--and the Committee for the Press--Book Propaganda, Exhibitions and Fairs Directorate.

Article 27. (1) The shipping and receiving of pharmaceuticals shall be allowed on the basis of types and quantities permitted by the Ministry of Public Health.

The types and amounts of pharmaceuticals whose export is allowed are indicated in Appendix No 5. The import of pharmaceuticals shall be allowed on the basis of a prescription or a protocol issued by a medical institution.

(2) Permits for imports of pharmaceuticals may be issued and their prices may be determined by the pharmaceutical enterprises of the individual okrugs and the pharmacist at the Sofia Customs Office. The control-permit shall be noted on the prescription or protocol.

Concluding Stipulations

Only paragraph. The present ordinance is issued on the basis of Articles 29 and 75 of the Law on Customs and Article 78 of the Regulation on the Application of the Law on Customs, replacing the Ordinance on Customs Control and Customs Duties on International Postal Parcels of 1974 issued by the Ministry of Finance and the Ministry of Information and Communications.

Minister: B. Belchev

Appendix No 1 to Article 3, paragraph (1)

List of Customs Offices and Areas in Which Matters Related to the Export and Import of Items Through International Postal Parcels May Be Resolved

Customs Office	Area
Vidin	Vidin Okrug
Lom	Mikhaylovgrad and Vratsa okrugs
	Pleven Okrug
	Turnovo, Gabrovo and Lovech okrugs
Ruse	Ruse, Turgovishte and Razgrad okrugs
	Silistra Okrug
Tolbukhin	Tolbukhin Okrug
Varna	Varna and Shumen okrugs
Burgas	Burgas, Yambol and Sliven okrugs
	Khaskovo Okrug
Plovdiv	Plovdiv, Stara Zagora and Smolyan okrugs
Sofia Customs	Sofia, Kyustendil, Pernik and Blagoevgrad okrugs

The customs offices in Malko Turnovo, Kulata, Zlatareo, Stanke Lisichkovo and Gyueshevo will deal with problems related to the export of items by physical persons through international postal parcels exclusively for the settlement in w the corresponding customs office is located.

In addition to its activities in its stipulated area the Sofia Customs Office will control all small parcels arriving from the GDR, Poland, USSR, Hungary and Czechoslovakia whose wrapping bears the rombic seal. Such parcels shall be then sent directly to the post offices of their destination for delivery to the addressees (Article 7, paragraph 2).

Appendix No 2 to Article 4, paragraphs (2) and (3)

List of Objects Whose Import From and Export Into the Bulgarian People's Republic is Prohibited and of Items Whose Duty-Free Export From the Bulgarian People's Republic Through Postal Parcels is Prohibited

Section I

A. Items Whose Export From the Bulgarian People's Republic is Prohibited

1. Weapons, ammunition, military equipment, explosives, and inflammatory and other dangerous substances.

2. Narcotics and attachments for their use.

3. Objects of immoral content.

4. Goods for commercial purposes or production purposes; commodity samples.

5. Bank notes, coins, valuables and other foreign exchange valuable items as per Article 3 of the Law on Deals in Foreign Exchange Valuables and Foreign Exchange Control (ZSVTsVK).

6. Items, produce, or beverages in hermetically sealed containers (cans, etc.) concealing their content.

7. Cancelled or uncancelled mailing stamps and other philatelic materials with the exception of the cases and in accordance with the procedure stipulated in the Regulation on the Exchange of Postal Stamps with Foreign Countries.

8. Live animals with the exception of bees, leeches, silkworms, parasites and destroyers of harmful insects used for research purposes exchanged exclusively among officially recognized scientific institutes and establishments.

9. Printed matter, photographs, films, drawings, designs and other items whose shipping abroad could cause economic or other damage to the state; official publications and materials with restricted circulation and use.

10. Seeding and planting materials.

11. Antique objects and works of art such as paintings, drawings, portraits, sculptures, miniatures, carpets, tapestries, icons, church and household items, weapons, furniture, fabrics, decorations, clothing, manuscripts, books, musical instruments, craft instruments, coins made of precious and nonprecious metals, and other items of archaeological, antique or numismatic significance or considered ornaments of culture.

12. Objects whose shipping in postal parcels is forbidden in accordance with the stipulations of Ordinance No 4 on postal communications and the Universal Postal Convention.

13. Items whose importation is prohibited in the country of destination.

14. Persian-type rugs and carpets.

B. Items and parcels may not be imported into the Bulgarian People's Republic

1. Weapons, ammunition, military equipment, explosives, and inflammatory and other dangerous substances.

2. Narcotics and attachments for their use.

3. Objects of immoral content.

4. Goods for commercial purposes or production purposes; commodity samples.

5. Bank notes, coins, valuables and other foreign exchange valuable items as per Article 3 of the Law on Deals in Foreign Exchange Valuables and Foreign Exchange Control (ZSVTsVK).

6. Items, produce, or beverages in hermetically sealed containers (cans, etc.) concealing their content.

7. Cancelled or uncancelled mailing stamps and other philatelic materials with the exception of the cases and in accordance with the procedure stipulated in the Regulation on the Exchange of Postal Stamps with Foreign Countries.

8. Live animals with the exception of bees, leeches, silkworms, parasites and destroyers of harmful insects used for research purposes exchanged exclusively among officially recognized scientific institutes and establishments.

9. Printed matter, cliches, negatives, still and motion pictures, films, photographs, paintings, drawings, designs, manuscripts, records or recorded tapes, and others which may be politically, economically and ideologically harmful to the socialist state.

10. Gift parcels containing used clothing, shoes, bedding, covers, or bed covers.

11. Used motor vehicle tires.

12. Shipments by foreign companies with the exception of the cases stipulated in Article 66 of the PPZM and Note 3 of the list.

Note 1. Items confiscated for moral, health or political reasons shall not be returned.

2. Parcels as per item 10 shall be returned to sender at his expense.

3. The prohibition as per item 12 shall not apply in the following cases:

a. Postal parcels containing objects worth no more than 50 leva, Bulgarian retail prices, providing that receipt of the parcel does not originate any obligation on the part of the local resident to the foreign company;

b. Should the object be ordered from a foreign country as per Article 7, letter "b" of the Ordinance on Foreign Currency Deposits by Local Residents.

4. Foreign currency and other valuables received by local residents in postal parcels must be submitted to the Bulgarian National Bank (Bulgarian Foreign Trade Bank) within 14 days of the date of receival (Article 20 of the Ordinance on Border Control of Valuables (NGKVTs), DV, No 59, 1966). Bulgarian leva included in international postal parcels shall be submitted to the Bulgarian National Bank for deposit as state revenue (Article 20 of the NGKVTs).

Section II

Items whose duty-free exportation from the Bulgarian People's Republic is prohibited.

1. Clothing for babies and children, including knitted goods and babies' and children's shoes.

2. Unbleached calico and sheeting and their products--bed sheets and pillow cases.

3. Meat products.

4. Dairy products.

5. Vegetal and animal fats.

Remark. The prohibition does not apply to cases stipulated in Article 22, paragraph 1, point 2, of the ordinance.

Postal Administration of the
Bulgarian People's Republic

Appendix No 3 to Article 13, paragraph 1

Customs Declaration S2/SR3

(1) Name and address of sender
(2) Eventual reference number of sender
(3) Name and address of addressee
(4) Mark with (x) the proper square
☐ gift ☐ commercial samples
(5) I hereby certify to the accuracy of the information contained in the declaration.
(6) Place of issue and date.
(7) Note
(8) Signature
(9) Country of origin of the goods
(10) Country of destination
(11) Total gross weight kg grams
(12) Number of parcels
(13) Detailed description of contents

(14) Tariff number
(15) Net weight (16) Value

kg grams

The customs declaration must be filled in French or any other language admissible in the country of destination.

(A) Read instructions on reverse side before filling declaration.

Appendix No 4 to Article 13, paragraph 1.

Customs Office 81

May be opened officially

....

(Part which must be cut off should the parcel be accompanied by a customs declaration. If not, it must be filled.)

See instructions on back.

Detailed description of contents

....
....

Mark with (x) if it is:
a gift ______
a commercial sample______

Value (indicate currency) Net Weight

Appendix No 5 to Article 27, paragraph 1

List of pharmaceuticals which may be exported and shipped to a foreign country and their amounts

Abriderm ointment--20 gram container	no	more	than	30	
Abricyclin vials for intravenous injection 0.275 and 0.11 grams	"	"	"	30	
Abricyclin vials for intermuscular injection o.15 and 0.35 grams	"	"	"	30	
Adepren ampules 0.25 percent--1 ml	"	"	"	50	
Adepren sheet tablets 0.005 grams, container of 50	"	"	"	5	pkgs
Adepren " " 0.01gram, container of 60	"	"	"	5	"
Adinorm and Adinorm neo, liquid--10 mg container	"	"	"	5	"
Adrenalin tartaric, ampules, 0.1 percent--1 ml	"	"	"	50	
Adrenalin tartaric ampules, 0.25 percent--1 ml	"	"	"	50	
Albumen tannic, 0.5 gram tablets, container of 20	"	"	"	5	
Alcosin ampules, 2 ml	"	"	"	50	
Alcosin sheet tablets, container of 20	"	"	"	5	

Alergosan ampules 0.02 grams--2 ml	no more than 50
Alergosan pills 0.025 grams, container of 20	" " " 5
Alergosan ointment 1 percent, 18 gram container	" " " 5
Alergosan cream 1 percent, 18 gram container	" " " 5
Aliliormorphine ampules 0.5 and 1 percent, 1 ml	" " " 50
Almagel and Almagel A, 170 ml container	" " " 5
Alumoxide powder, 50 gram container	" " " 5
Alumoxide with belladona tablets, container of 2	" " " 5
Alcid V, package of 60	" " " 5
Amidopirin (amaidophene), 0.1 and 0.3 gram tablets, container of 10	" " " 5
Ampicillin, 0.5 gram flasks	" " " 30
Ampicillin capsules 0.25 grams, container of 16	" " " 5
Ampicillin granules, package of 30 grams	" " " 5
Ampicillin sheet tablets 0.25 and 0.5 grams, cont. of 16	" " " 5
Analgin tablets, 0.5 grams, container of 10	" " " 5
Analgin ampules 50 percent, 1 and 2 ml	" " " 50
Analgin-quinine pills, cont. of 10	" " " 5
Anapirin tablets, cont. of 6	" " " 5
Antialersin ampules 0.05 grams, 2 ml	" " " 50
Antialersin pills 0.025 grams, cont. of 20	" " " 5
Antianemin forte ampules, 2 ml	" " " 50
Antiastmin tablets, cont. of 20	" " " 5
Antiacid and antiacid B, cont. of 100	" " " 5
Antigripal pills, cont. of 20	" " " 5
Antiepilepticum tablets, cont. of 30	" " " 5
Antiseborin, liquid, cont. of 120 ml	" " " 5
Antisclerol pills, container of 30	" " " 5
Antispasmin tablets 0.005 grams, container of 20	" " " 5
Antistenocardin pills 0.025 grams, container of 30	" " " 5
Antistenocardin ampules 0.01 gram, 2 ml	" " " 50
Antitusin liquid, 10 ml container	" " " 5
Apitonin capsules 0.005, 0.02 and 0.06 grams, container of 16	" " " 5
Apomorphine hydrochloric ampules 0.003 and 0.005 grams, 1 ml	" " " 50
Arsenferatol liquid, 250 ml container	" " " 5
Arthrochin ampules 5 percent, 5 ml	" " " 50
Arthrochin tablets 0.25 grams, container of 10	" " " 5
Ascophen tablets, container of 10	" " " 5
Astma cigarettes, container of 20	" " " 5
Astmophysin neo ampules, 1 ml	" " " 50
ASTN ampules 20 E, 1 ml	" " " 50
Atropin sulfuric ampules 0.1 percent, 1 ml	" " " 50
Atropin sulfuric tablets, 0.5 mg and 0.01 gram, container of 20	" " " 5
Atropin sulfuric liquid 1 percent, 10 ml container	" " " 5
Aphroton pills, container of 25	" " " 5
Ahistamine tablets 0.05 grams, container of 20	" " " 5
Ahistamine ointment 2 percent, 18 gram container	" " " 5
Ahistamine cream 2 percent, 18 gram container	" " " 5
Acetisal tablets 0.5 grams, container of 20	" " " 5

Acetisal tablets, effervescent 0.5 grams, container of 50	no	more	than	5
Acetisal tablets 0.6 grams container of 30	"	"	"	5
Acetisal with vitamin C tablets, effervescent, container of 10	"	"	"	5
Acephein tablets, container of 10	"	"	"	5
Boric acid ointment 5 percent, 18 gram container	"	"	"	5
Glutaminic acid tablets 0.25 grams, container of 10	"	"	"	5
Nicotinic acid ampules 1 percent, 2 and 5 ml	"	"	"	50
Nicotinic acid tablets 0.05 grams, containers of 10 and 20	"	"	"	5
Orotic acid ampules 1 percent, 1 ml	"	"	"	50
Folic acid tablets 0.05 grams, container of 100	"	"	"	5
Barbiphen tablets container of 10	"	"	"	5
Benalgin tablets, container of 60	"	"	"	5
Beldipin pills, container of 20	"	"	"	5
Belascusin suppositories, container of 5	"	"	"	5
Belastelin suppositories, container of 3	"	"	"	5
Bellergamin pills, container of 50	"	"	"	5
Bellonal tablets, container of 20	"	"	"	5
Benalgin tablets, container of 20	"	"	"	5
Benzacillin syrup, 60 ml container	"	"	"	5
Benzacillin flasks, 600,000 and 1,200,000 E	"	"	"	50
Benzacillin composite vials 1,200,000 E	"	"	"	50
Benastmin sheet tablets, container of 70	"	"	"	5
Bisalax pills 0.005 grams, container of 30	"	"	"	5
Bixalax suppositories, 0.005 and 0.01 gram, container of 6	"	"	"	5
Biiodiorinethyrosin tablets 0.1 gram, container of 20	"	"	"	5
Biclothymol ointment 5 percent, 20 gram container	"	"	"	5
Biclothymol powder 0.5 percent, 50 gram container	"	"	"	5
Biclothymol tablets 0.005 grams, container of 20	"	"	"	5
Bionabol tablets 0.002 and 0.005, container of 40	"	"	"	5
Bionabol tablets 0.001 gram, container of 20	"	"	"	5
Bismuthanalbin tablets, container of 20	"	"	"	5
Bismucide, granules, 4 grams, container of 20	"	"	"	5
Bisolvon tablets 0.008 grams, container of 20	"	"	"	5
Bisolvon solution 2 mg per ml, 40 ml container	"	"	"	5
Bisulphon D, 0.75 gram tablets, container of 12	"	"	"	5
Bisulphon D granules for syrup, 30 gram container	"	"	"	5
Bisulphon D syrup 10 percent, 50 ml container	"	"	"	5
Brivicide eye ointment, 10 gram container	"	"	"	5
Brivicide losenges, 5 mg, container of 50	"	"	"	5
Brivicide concentrated powder, 10 gram container	"	"	"	5
Brivicide ointment 2 mg per gram, 20 gram container	"	"	"	5
Bresol liquid 120 ml container	"	"	"	5
Bromalgin ampules, 10 mg	"	"	"	50
Bromatropin ampules 0.5 and 1 mg, 10 ml	"	"	"	50
Bromisovalum tablets 0.3 grams, container of 10 grams	"	"	"	5
Broncholithin syrup 125 gram container	"	"	"	5
Bourge granules, 4 grams, container of 20	"	"	"	5
Bourge neo granules 4 grams, container of 20	"	"	"	5
Buscolisin ampules 2 percent, 1 ml	"	"	"	50
Buscolisin pills 0.01 gram, container of 20	"	"	"	5
Buscolisin suppositories for adults, 0.01 gram, cont. of 6	"	"	"	5

Buscolisin suppositories for children,	no	more	than	
0.0075 grams, container of 6	"	"	"	5
Buscolisin complex ampules 5 ml	"	"	"	50
Buscolisin complex pills, container of 25	"	"	"	5
Buscolisin complex suppositories, container of 6	"	"	"	5
Butadion pills 0.2 grams, container of 20	"	"	"	5
Butapirin pills, container of 20	"	"	"	5
Butasal tablets, container of 20	"	"	"	5
Butasolon tablets, container of 40	"	"	"	5
Vagisteran tablets, 0.2 grams, container of 12	"	"	"	5
Vasolat ampules, 0.05 grams, 1 ml	"	"	"	50
Vasolat tablets 0.025 grams, container of 20	"	"	"	5
Vasolat liquid 1 percent, 20 ml container	"	"	"	5
Venoruton ampules, 0.5 grams	"	"	"	50
Venoruton capsules, 0.3 grams, container of 50	"	"	"	5
Venoruton gel, 40 gram container	"	"	"	5
Veridon tablets 0.4 grams, container of 10	"	"	"	5
Vibramycin capsules 0.1 gram, container of 5	"	"	"	5
Vicomplex pills, container of 100	"	"	"	5
Vincapan tablets 0.01 gram, container of 50	"	"	"	5
Vipraplex forte linament, 50 gram container	"	"	"	5
Vitaiodurol liquid, 15 ml container	"	"	"	5
Vitamaltosa granules, 250 gram container	"	"	"	5
Vitamin A ampules 25,000 and 30,000 E	"	"	"	50
Vitamin A drops 2,500, 4,500, and 50,000 E	"	"	"	5
Vitamin A pills 2,500 and 50,000 E	"	"	"	5
Vitamin B$_1$ ampules 2.5 and 4percent--1 and 2 ml	"	"	"	50
Vitamin B$_1$ pills 0.003, 0.005 and 0.01 grams, containers of 20 and 40	"	"	"	5
Vitamin B$_1$ coated tablets 0.003 and 0.005 grams, container of 40	"	"	"	5
Vitamin B$_2$ ampules 0.50 percent, 2 ml	"	"	"	50
Vitamin B$_2$ pills 0.001 gram, container of 10	"	"	"	5
Vitamin B$_2$ sheet tablets 0.001 gram, container of 20	"	"	"	5
Vitamin B$_{12}$ ampules 50, 100, 250 and 500 mg	"	"	"	50
Vitamin B$_{12}$ with Vitamin B$_1$ ampules 2 ml	"	"	"	5
Vitamin B$_2$ complex ampules 2 ml	"	"	"	50
Vitamin B complex pills, container of 20	"	"	"	5
Vitamin B complex syrup, 125 ml container	"	"	"	5
Vitamin C ampules 5 and 10 percent, 2 and 5 ml	"	"	"	50
Vitamin C tablets 0.1 gram, container of 40	"	"	"	5
Vitamin D$_2$ ampules, oil solution 30,000 and 60,000 E	"	"	"	50
Vitamin D$_2$ pills 1,000 E, container of 20	"	"	"	5
Vitamin D$_2$ drops 80, 500, 1,000, 10,000, and 100,000 E	"	"	"	5
Vitamin D$_3$ ampules 300,000 E, 1 ml	"	"	"	50
Vitamin D$_3$ capsules 300,000 E, container of 20	"	"	"	5
Vitamin D$_3$ liquid, 10 ml container	"	"	"	5
Vitamin E ampules 0.03 grams, 2 ml	"	"	"	50
Vitamin E pills 0.01 and 0.05 grams, container of 20	"	"	"	5
Vitamin E drops 0.005, 0.01 and 0.015 grams	"	"	"	5
Vitamin K ampules 0.01 gram, 1 ml	"	"	"	50
Vitamin K pills 0.01 gram, container of 20	"	"	"	5

	no	more	than	
Vitestrol ampules 0.1 percent, 1 ml	"	"	"	50
Vitestrol ampules 1 percent, 1 and 2 ml	"	"	"	50
Vulnusan ointment, container of 20 and 45 grams	"	"	"	5
Gamma-globulene ampules 1 and 3 ml	"	"	"	5
Gastrofarm tablets 2.5 grams, container of 20	"	"	"	5
Gentamycin ampules 0.01 gram, 1 ml	"	"	"	50
Gentamycin ointment 0.1 percent	"	"	"	5
Gentamycin cream 0.1 percent,15 gram container	"	"	"	5
Gentamycin eye drops 1 percent, 5 ml	"	"	"	5
Gentamycin eye ointment 0.05 percent, 5 gram container	"	"	"	5
Gentamycin aerosol spray, 0.1 percent, 210 ml container	"	"	"	5
Gentamycin aerosol foam, 0.08 percent, 210 ml container	"	"	"	5
Gericain ampules 0.1 gram, 5 ml	"	"	"	50
Gericain tablets 0.1 gram container of 25	"	"	"	5
Geritamin capsules, container of 40	"	"	"	5
Glauterpin tablets, container of 10	"	"	"	5
Glauvent pills 0.01 and 0.04 grams, container of 20	"	"	"	5
Deavit ampules 1 ml	"	"	"	50
Deavit liquid, 10 ml container	"	"	"	5
Depo-sulfamide M tablets 0.5 grams, container of 10	"	"	"	5
Dermatin ointment 30 gram container	"	"	"	5
Deflamol ointment, 18 gram container	"	"	"	5
Dehydratin tablets 0.25 grams, container of 25	"	"	"	5
Dehydratin Neo tablets 0.025 grams, container of 20	"	"	"	5
Diabecide P tablets 0.5 grams, container of 50	"	"	"	5
Diasepam tablets 0.005 and 0.01 gram, container of 20	"	"	"	5
Dietasal, 30 gram container	"	"	"	5
Digitalin liquid 1 per thousand, 10 ml container	"	"	"	5
Didepil tablets, container of 100	"	"	"	5
Disenterol tablets 0.22 grams, container of 20	"	"	"	5
Disepin ampules (powder) 0.1 grams + (r-tel)	"	"	"	50
Dsepin pills 0.005 and 0.01 gram, containers of 150 and 100	"	"	"	5
Dimenhydrinate tablets 0.05 grams, container of 25	"	"	"	5
Dimenhydrinate syrup 0.3 percent, 125 ml container	"	"	"	5
Dolin ampules 2 ml	"	"	"	50
Dolispan suppositories, container of 6	"	"	"	5
Dolispan sheet tablets, container of 20	"	"	"	5
EDTA Calcium-disodium ampules 10 percent-10 ml; 20 percent - 5 and 10 ml	"	"	"	50
EDTA disodium collirium 0.37 percent, 10 ml container	"	"	"	5
Velerian extract sheet tablets, 0.3 gram	"	"	"	5
Thyroid gland extract, pills 0.1 and 0.3 gram, container of 50	"	"	"	5
Eldona tablets 0.5 gram, container of 40	"	"	"	5
Elixir tonic, liquid 150 gram container	"	"	"	5
Endoiodin ampules 20 percent, 2 ml	"	"	"	50
Enteroquin pills, container of 20	"	"	"	5
Epiphelisin ointment, 20 gram container	"	"	"	5
Ergotamin pills, 0.001 gram, container of 15	"	"	"	5
Ergotamin liquid 0.1 percent, 10 ml container	"	"	"	5

Eritran pills, 0.2 and 0.1 gram, container of 20 and 10	no more than	5
Eritran tablets, 0.1 and 0.25 gram, container of 20	" " "	5
Eritran granules for syrup, 30 gram container	" " "	5
Escuvasin liquid, 20 ml container	" " "	5
Escuvasin composite liquid, 20 ml container	" " "	5
Estradiol B and Estradiol R ampules, 1 ml container	" " "	50
Estradiol B and Estradiol R (lingveti) 0.1 mg. container of 10	" " "	5
Etambytol tablets, 0.1 and 0.25 gram, container of 100 and 50	" " "	5
Etistrol (lingveti), container of 20	" " "	5
Etistrol ampules, oil solution, 1 ml	" " "	50
Eunervina liquid 200 ml container	" " "	5
Eupaverin ampules 0.03 gram, 200 ml container	" " "	50
Euspazmin tablets, container of 20	" " "	5
Euspazmin suppositories, container of 5	" " "	5
Isephen tablets 0.005 grams, container of 20	" " "	5
Isobutason pills, container of 20	" " "	5
Isoprenalin (lingveti) 0.2 grams, container of 20	" " "	5
Isoprenalin liquid 1 percent, 10 ml container	" " "	5
Indometacin capsules 0.025 grams, container of 30	" " "	5
Indometacin suppositories 0.05 grams, container of 6	" " "	5
Indometacin ointment 20 percent, 20 grams	" " "	5
Insulin "Farmakhim" 200 E	" " "	30
INKhA-17 tablets, 0.3 grams, container of 50	" " "	5
Ichtio ointment 10 percent, 18 gram container	" " "	5
Iodferatol liquid, 250 ml container	" " "	5
Yohimbin tablets, 0.01, container of 10	" " "	5
Potassium iodide pills 0.001 and 0.0005 gram, container of 100	" " "	5
Potassium chloride ampules 15 percent, 10 ml cont.	" " "	50
Potassium chloride tablets 0.5 gram, container of 70	" " "	5
Calcium bromate ampules 4 percent, 5 and 10 ml	" " "	50
Calcium bromlactobionate ampules, 5 and 10 ml	" " "	50
Calcium bromlaktobionate granules, 100 gram	" " "	5
Calcium C tablets, container of 40	" " "	5
Calcium D tablets, container of 40	" " "	5
Calcium chloride ampules 10 percent, 5 and 10 ml	" " "	50
Calcium C-Phospho sheet tablets, container of 40	" " "	5
Canamicin sulfuric capsules 0.25 gram, container of 16	" " "	5
Canamicin sulfuric tablets 0.125 gram, container of 20	" " "	5
Capsiplast "Emka" Plaster 15 by 15 cm	" " "	5
Capsiplast "Emka",plaster 15 x 25 cm	" " "	5
Capsiplast "Emka" plaster 15 by 30 cm	" " "	5
Carbiphen tablets 0.5 gram, container of 40	" " "	5
Activated carbon granules, containers of 25 and 50 grams	" " "	5
Kinetol ointment 20 gr container	" " "	5
Codterpin tablets 0.01 gram, container of 10	" " "	5
Cola granulata granules 100 gram container	" " "	5
Compresol tablets, container of 10	" " "	5
Corasol liquid 10 percent, 10 ml container	" " "	5

	no	more	than	
Corasol-dicodal liquid, 10 ml container	"	"	"	5
Corasol-ephedrine liquid, 10 ml cont.	"	"	"	5
Cordiamin liquid 25%, 10 ml cont.	"	"	"	5
Corticadinol jelly, 18 gram cont.	"	"	"	5
Corticorenol jelly, 18 gram cont.	"	"	"	5
Cortimycin eye ointment, 5 gram container	"	"	"	5
Cortimycin dermitological ointment, 10 gram cont.	"	"	"	5
Cofenal tablets, container of 10	"	"	"	5
Cofergamin pills, container of 20	"	"	"	5
Lanatigen C tablets	"	"	"	5
Lanatigen C liquid, 0.1 percent, 10 ml cont.	"	"	"	5
Levocort aerosol 140 grams, 250 ml	"	"	"	5
Locacorten cream 30 gram cont.	"	"	"	5
Locacorten ointment 30 gram cont.	"	"	"	5
Locacorten N ointment, 30 gram container	"	"	"	5
Locacorten N cream, 30 gram cont.	"	"	"	5
Locasalen ointment, 15 gram cont.	"	"	"	5
Lonetil tablets 0.1 gram, container of 50	"	"	"	5
Masolek ointment, 5 gram container	"	"	"	5
Manivit granules, effervencent, 12 grams each, cont. of 20	"	"	"	5
Maralit ampules, 50 ml cont.	"	"	"	50
Maraslavin liquid, 100 ml container	"	"	"	5
Marbadal-ciren tablets, cont. of 30	"	"	"	5
Mecamilamid tablets, 0.0025 gram, cont. of 40	"	"	"	5
Melivenon--all kinds	"	"	"	5
Methionin tablets 0.5 grams, container of 20	"	"	"	5
Methionin ampules, 10%, 5 ml cont.	"	"	"	50
Metromin tablets, container of 12	"	"	"	5
Mitisin powder, container of 100 grams	"	"	"	5
Mycodermin ointment, container of 18 grams	"	"	"	5
Mycodermin powder, 20 gram container	"	"	"	5
Narcoterpinn tablets, container of 10	"	"	"	5
Sodium salicylate ampules 10 percent, 5 and 10 ml cont.	"	"	"	50
Naphasolin liquid 0.05 and 0.1 percent, 10 ml cont.	"	"	"	5
Nalidix tablets 0.5 gram, cont. of 56	"	"	"	5
Nemibacin dermatological ointment, cont. of 5 grams	"	"	"	5
Nemibasin ointment, cont. of 2.5 grams	"	"	"	5
Neoginon pills, container of 21	"	"	"	5
Neohepatis ampules, 2 ml container	"	"	"	50
Neostigmin tablets 0.015 grams, container of 20	"	"	"	5
Neurin pills, cont. of 100	"	"	"	5
Neurobex pills, cont. of 30	"	"	"	5
Neurolax pills, 0.025 grams, cont. of 50	"	"	"	5
Neurotin pills, cont. of 100	"	"	"	5
Nivalet tablets, cont. of 50	"	"	"	5
Nivalin ampules 1; 2.5 and 5 $^{o}/oo$; 1 percent, 1 ml cont.	"	"	"	50
Nivalin tablets, 0.001 and 0.005 grams, cont. of 50	"	"	"	5
Nicohol sheet tablets, 0.25 gram, container of 60	"	"	"	5
Nistatin tablets 500,000 E, cont. of 20	"	"	"	5
Nistacyclin pills, cont. of 24	"	"	"	5
5-Nitrox sheet tablets 0.05 grams, cont. of 10	"	"	"	5

Nifimycin vaginal tablets, 10,000 E, cont. of 15	no more than	5
Nifimycin powder 12.5 percent, container of 20 grams	" " "	5
Nifimycin ointment, 5 percent, cont. of 20 grams	" " "	5
Noviform eye ointment 5 percent, cont. of 5 grams	" " "	5
Novobyosin capsules 0.25 gram, cont. of 16	" " "	5
Novoplex ampules, 2 and 5 ml	" " "	50
Novphyllin ampules, 0.48 and 0.24 grams, 2 and 10 ml cont.	" " "	50
Novphyllin tablets 0.1 gram, cont. of 10	" " "	5
Nodoplegin tablets 0.0025 grams, cont. of 50	" " "	5
Normoflor capsules 0.1 gram, cont. of 16	" " "	5
Normotimin tablets 0.3 grams, cont. of 40	" " "	5
Norsulfasol ampules 20 percent, 2 and 5 ml	" " "	50
Norsulfasol tablets 0.5 grams, cont. of 20	" " "	5
Oxacillin capsules, 0.25 gram, cont. of 10	" " "	5
Oxitetracyclin liquid for intramuscular and intravenus use, 0.1 gram	" " "	30
Oxitetracyclin capsules, 0.25 grams, cont. of 16	" " "	5
Oxitetracyclin eye ointment, cont. of 5 grams	" " "	5
Oxitetracyclin B-complex capsules, cont. of 16	" " "	5
Oleandecetil granulated, cont. of 30 grams	" " "	5
Oleandomycin liquid 0.5 grams for intramuscular and intravenus use	" " "	50
Oleandomycin pills 0.125 grams, cont. of 24	" " "	5
Oleflavit pills, 0.125 grams, cont. of 24	" " "	5
Ombroderm ointment, cont. of 18 grams	" " "	5
Orafuran tablets 0.1 gram, cont. of 50	" " "	5
Orestron ampules 0.5 mg - 1 ml	" " "	50
Orestron tablets 0.25 mg. cont. of 20	" " "	5
Orovit ampules, 1 ml	" " "	50
Otalgeton liquid, 5 ml container	" " "	5
Pancreatin pills, 0.25 gram, cont. of 50	" " "	5
Papaverin hydrochloric ampules 1 and 2 percent, 1 ml	" " "	50
Parquisan tablets 0.002 and 0.005 grams, cont. of 100	" " "	5
PAS-sodium tablets, 0.5 gram, cont. of 1000	" " "	5
Penicillin G potassium 250,000, 500,000 and 1,000,000 E	" " "	30
Pepsinal syrup, 125 ml container	" " "	5
Peflavit C pills, cont. of 100	" " "	5
Perigran syrup, container of 170 grams	" " "	5
Pilocarpin hydrochloric Collir 1, 2 and 6 percent, 10 ml container	" " "	5
Pilocarpin hydrochloric ointment 1 and 2 percent, cont. of 3 grams	" " "	5
Piloton liquid, 100 gram container	" " "	5
Piperasin adipinate tablets 0.25 and 0.5 grams, cont. of 12	" " "	5
Piperasin granulated, effervescent, cont. of 50 grams	" " "	5
Piramem ampules 20 percent, 5 ml container	" " "	50
Piramem sheet tablets 0.4 gram, container of 60	" " "	5
Piraminal tablets, container of 10	" " "	5
Piranal tablets, 0.5 grams, cont. of 6	" " "	5
Pimadin ampules 0.5 percent, 2 ml	" " "	50

Pituhormone ampules 3 and 10 E, 1 ml	no more than	50
Polymineral liquid, 100 ml container	" " "	5
Prednisolon tablets, 0.005 grams, cont. of 20	" " "	5
Prednisolon F tablets 0.5 --cont. of 30	" " "	5
Prenilamin and Prenilamin S pills, 0.015 grams	" " "	5
Primolut-nor tablets 0.005 gram, cont. of 20	" " "	5
Procillin liquid, 300,000, 600,000, 1,200,000 E	" " "	50
Progesteron ampules 0.5 and 1 percent, 1 ml	" " "	50
Psychophorin ampules, 0.025 gram, 2 ml	" " "	50
Psychophorin pills, 0.025 gram, cont. of 50	" " "	5
Pulbequin ampules 1 and 2 ml	" " "	50
Laxative tablets for children, 0.1 gram, cont. of 25	" " "	5
Resamid tablets, cont. of 30	" " "	5
Reserpine tablets 1.4 and 0.1 mg. container of 40	" " "	5
Reserpine complex, cont. of 50	" " "	5
Rectan paste, container of 8 grams	" " "	5
Retisid tablets, container of 30	" " "	5
Rimetin tablets, 0.01--cont. of 10	" " "	5
Rimicide ampules 0.05 grams, 2 ml	" " "	50
Rimicide tablets, 0.05 and 0.1 grams, cont. of 150	" " "	5
Rinosol aerosol, 30 ml container	" " "	5
Riperol granules	" " "	5
Rosalin ointment, cont. of 18 grams	" " "	5
Rosanol capsules 0.1 gram, cont. of 30	" " "	5
Rondomycin capsules 0.15 gram, cont. of 16	" " "	5
Rutascorbin sheet tablets, container of 100	" " "	5
Rutasterol pills, cont. of 50	" " "	5
Salastesin liquid, 100 ml container	" " "	5
Bromium salt, granulated, effervescent, 100 gram cont.	" " "	5
Salicylamide tablets 0.5 gram, cont. of 20	" " "	5
Saluretin tablets 0.1 gram, cont. of 15	" " "	5
Sandosten calcium tablets, effervescent, cont. of 12	" " "	5
Santamon tablets, cont. of 12	" " "	5
Santonin tablets 0.02 gram, cont. of 10	" " "	5
Sedalgin tablets, cont. of 10	" " "	5
Sedalgin neo tablets, cont. of 10	" " "	5
Sedaphene tablets, cont. of 10	" " "	5
Sinemet tablets, cont. of 90	" " "	5
Scabisol aerosol 10 and 30 percent, 210 ml container	" " "	5
Soluran granules, cont. of 300 grams	" " "	5
Spasmalgon ampules, 5 ml	" " "	50
Spasmalgon tablets, cont. of 20	" " "	5
Spasmalgon liquid, 10 ml container	" " "	5
Spasmocalm tablets, 0.02 grams, cont. of 10	" " "	5
Spasmocalm tablets, 0.04 grams, cont. of 10	" " "	5
Spasmocalm ampules, 2 percent, 1 ml	" " "	50
Spironolakton pills, 0.025 grams, cont. of 30	" " "	5
Stenopril sheet tablets, 0.02 grams, cont. of 30	" " "	5
Stipticin tablets 0.05 grams, cont. of 20	" " "	5
Streptomycin sulfuric, 0.5 and 1 gram flasks	" " "	30
Streptopanat 1 gram flasks	" " "	30

	no more than	
Strophantin G and Strophantin K ampules, 0.04 percent, 1 ml	" " "	50
Strichnoarsin pills, cont. of 70	" " "	5
Sulfacol powder, 18 gram container	" " "	5
Sodium sulfacil ampules 30 percent, 2.5 and 10 ml	" " "	50
Tabex tablets 0.0015 grams, container of 100	" " "	5
Tavegil tablets, 0.001 gram, container of 20	" " "	5
Tavegil syrup, 200 ml container	" " "	5
Temo tablets, container of 20	" " "	5
Tempalgin tablets 0.52 gram, container of 10	" " "	5
Tempalgin ampules, 2 ml	" " "	50
Tempalgin suppositories, cont. of 6	" " "	5
Tempidon ampules, 2 percent, 1 ml	" " "	50
Tempidon tablets 0.02 grams, cont. of 50	" " "	5
Teobrosal tablets, 0.5 gram, cont. of 20	" " "	5
Teobrosal calcium tablets, 0.5 gram, cont. of 20	" " "	5
Teresulfol capsuls 0.15 gram, cont. of 60	" " "	5
Testosterone ampules 0.5 percent, 1 ml	" " "	50
Testosterone pills, 0.01 gram, cont. of 10	" " "	5
Testosterone sublingual tablets, 0.005 gram, cont. of 30	" " "	5
Tetraolean capsules 0.25 gram, cont. of 16	" " "	5
Tetraolean flasks 0.1 gram flasks for muscular application	" " "	30
Tetraolean granules for syrup, cont. of 30 grams	" " "	5
Tetracyclin B-complex capsules 0.25 gram, cont. of 16	" " "	5
Tetracyclin hydrochloric capsules 0.25 gram, cont. of 16	" " "	5
Tetracyclin hydrochloric flask 0.1 and 0.25 gram	" " "	30
Timidasol tablets 0.005 grams, cont. of 50	" " "	5
Thyoridasin pills 0.005 grams, cont. of 25	" " "	5
Thyroidasin pills 0.01 gram, cont. of 25	" " "	5
Thyroidasin pills 0.0025 grams, cont. of 50	" " "	5
Thyroidasin pills 0.05 grams, cont. of 50	" " "	5
Thyroidasin pills 0.1 gram, cont. of 25	" " "	5
Thyreotropin powder ampules, 0.005 grams	" " "	50
Tolasolin tablets 0.025 grams, container of 20	" " "	5
Tolasolin ampules 0.01 grams, 1 ml	" " "	50
Tosalin tablets 0.025 grams, cont. of 20	" " "	5
Torecan pills 0.0065 grams, cont. of 50	" " "	5
Tridiral liquid, 10 ml container	" " "	5
Trisim pills, cont. of 50	" " "	5
Trimesol tablets 0.12 grams, cont. of 20	" " "	5
Trimesol tablets 0.48 grams, cont. of 20	" " "	5
Tripsin dry ampules 0.05 grams	" " "	50
Trisulfon S tablets 0.5 grams, cont. of 10	" " "	5
Trisulfon S eye ointment, 10 percent, cont. of 5 grams	" " "	5
Trichomonacide tablets 0.25 gram, cont. of 20	" " "	5
Trichomonacide tablets 0.5 grams, container of 10	" " "	5
Tubocin capsules 0.15 and 0.3 grams	" " "	5
Tubocin granulated for syrup, 30 gram container	" " "	5
Tucedan tablets, container of 20	" " "	5
Tucifen and Tucifen-bebe, 100 ml container	" " "	5
Tucirol, 170 ml container	" " "	5

Ultradehydrocortizone cream, 5 gram container	no more than	5
Vitaform ointment, cont. of 5 grams	" " "	5
Dulce ointment No 1 and No 2, 20 gram container	" " "	5
Ephedrin ointment, 10 gram container	" " "	5
Ichtiol ointment, 18 gram container	" " "	5
Menthol ointment, 10 gram container	" " "	5
Rivanol ointment, 20 gram container	" " "	5
Zinc ointment, 18 gram container	" " "	5
Uridan, 50 gram container"	" " "	5
Urutin ampules, 1 ml	" " "	50
Pharmavit syrup, 100 ml container	" " "	5
Phenocillin tablets 0.100, 0.200 and 0.250 grams	" " "	5
Hausman Ferum ampules 0.1 gram, 2 ml	" " "	50
Phytamina granules, 10 gram container	" " "	5
Phytinofex granules, 100 gram container	" " "	5
Phytin tablets, 0.25 gram, cont. of 40	" " "	5
Phytodont liquid, 100 ml container	" " "	5
Flatugel, 170 ml container	" " "	5
Flatugel A, 170 ml cont.	" " "	5
Fluoride tablets 0.25 and 0.5 mg.	" " "	5
Fluperin pills 0.001 gram, cont. of 50	" " "	5
FFluperin pills, 0.005 grams, cont. of 50	" " "	5
Fransen suppositories for children, cont. of 5	" " "	5
Francen suppositories for adults, cont. of 5	" " "	5
Fungite and Fungite H ointment, 20 gram container	" " "	5
Fungite and Fungite H liquid, 20 ml cont.	" " "	5
Furacillin tablets, cont. of 20	" " "	5
Curacillin powder, 15 gram container	" " "	5
Furantril tablets, 0.04 grams, cont. of 12	" " "	5
Furantril tablets, 0.5 gram, cont. of 20	" " "	5
Furotalgin liquid, 5 ml container	" " "	5
Mustard plaster--sheets	" " "	5
Hexamide tablets 0.25 gram, cont. of 50	" " "	5
Hexacitrol tablets 0.5 gram, cont. of 20	" " "	5
Helmicide, 100 ml container	" " "	5
Hemoroidal suppositories, container of 6	" " "	5
Hepavit dulce liquid, 200 ml container	" " "	5
Heparin ampules 10 and 40 percent, 5 and 10 ml	" " "	50
Heparin tablets, 0.5 grams, container of 20	" " "	5
Hydrocortizone collyrium 1 percent, 3 ml container	" " "	5
Hydrocortizone cream 2.5 percent, 5 gram container	" " "	5
Hydrocortizone ointment 1 percent, 5 gram container	" " "	5
Hilasin ampules, 300 E, 2 ml	" " "	50
Quinidine sulfuric 0.2 grams, container of 20	" " "	5
Quinine pills, 0.5 grams, container of 40	" " "	5
Quinine pills, 0.2 grams, container of 10	" " "	5
Quinoxon tablets, container of 25	" " "	5
Histamine hydrochloric, collyrium, 3 ml container	" " "	5
Histamine hydrochloric ointment, 3 gram container	" " "	5

Chlorasin ampules, 1, 2 and 5 ml	no	more	than	50
Chlorasin pills, 0.025 grams, container of 50	"	"	"	5
Chlorasin liquid, 4 percent, 10 ml container	"	"	"	5
Chlorquinaldol pills, 0.1 gram, container of 50	"	"	"	5
Chlorquinaldol ointment 5 percent, 20 gram container	"	"	"	5
Chlorquinaldol ointment with hydrocortizone, 10 gram container	"	"	"	5
Chlorquinaldol powder, 15 gram container	"	"	"	5
Chlornitromycin capsules 0.25 grams, container of 16	"	"	"	5
Chlornitromycin syrup 5 percent, 50 gram container	"	"	"	5
Chlornitromycin dermatological ointment	"	"	"	5
Chlornitromycin eye ointment	"	"	"	5
Chlornitromycin B complex capsules, 0.25 grams, cont. of 16	"	"	"	5
Chlorpropamid tablets 0.1 gram, container of 100	"	"	"	5
Chlorpropamid tablets, 0.25 gram, container of 30	"	"	"	5
Chlorphasolin tablets 0.15 mg, container of 50	"	"	"	5
Chlorphasolin ampules, 0.1 mg. 1 ml	"	"	"	50
Cholagon pills, 0.25 gram, container of 50	"	"	"	5
Centrophenoxin capsules 0.1 gram, container of 30	"	"	"	5
Centrophenoxin sheet tablets0.1 gram, container of 30	"	"	"	5
Cephalexin sheet tablets 0.25 grams, container of 20	"	"	"	5
Cephalotin, 1 gram flask	"	"	"	50
Cytiton ampules, 0.15 percent, 1 ml	"	"	"	50

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DEVELOPMENT OF AGRARIAN ECONOMY SINCE 1944 REVIEWED

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[Article by Prof Nikola Palagachev: "Development and Achievements of Agriculture in the Course of 35 Years of People's Regime"]

[Text] The 9 September 1944 victorious uprising is the most profound revolutionary event of the entire almost 1,300-years-old Bulgarian history. It marked the defeat of the fascist dictatorship, the overthrow of the bourgeoisie and the victory of the democratic forces rallied within the Fatherland Front, headed by the communist party, who assumed responsibility for the further fate of the country.

In the course of 13 centuries Bulgaria has had a number of general or partial revolutions. The acceptance of Christianity in 865 and the beginning of the dissemination of the Slavic-Bulgarian alphabet were of revolutionary significance. The liberation of the country from the Turkish yoke, which put an end to the feudal system and gave scope to the development of the bourgeois society, was another social revolution.

However, against the background of all historical events the 9 September revolution is of outstanding grandeur as the most decisive and broadest possible revolution which not only defeated fascism and capitalism but became an event leading to the implementation of the loftiest aspirations, strives, and hopes of the brightest minds of the country and of the fighters for freedom and progress during the centuries. The 9 September victory laid the beginning of deep changes which marked a turn in the overall course of all previous Bulgarian history.

These have been 35 years of free creative life. Revolutionary changes on the way to socialism are continuing in all the areas of the material and spiritual building of a new life in Bulgaria.

The changes which occurred in the development of Bulgarian agriculture play a particular role in the overall constructive progress. This special role is defined not only by the great successes in agricultural output. The socialist reorganization of agriculture occurred with the creative application of the Leninist cooperative plan. It became a leading experience, a contagious experience for many countries.

Great difference in agrarian relations and in the levels of development of agricultural production exist in the various parts of the world.

The changes which took place in the development of Bulgarian agriculture on the way to its industrialization indicate one of the means for the reorganization of small private farming aimed at the effective solution of the complex agrarian problem under Bulgarian conditions. At all times the agrarian problem has been one of the theoretically most complex and most acute political problems most closely affecting the destinies of millions of rural people. In practical terms, the progressive and democratic structure of agrarian relations remains one of the most important and most sensitive problems of our time. The new way and example indicated by the socialist countries in this respect are among the most significant phenomena in the historical development of the world after 1917.

The Bulgarian People's Republic as well took this new path of development. In the course of the past 35 years it changed from a backward agrarian country into an advanced industrial-agrarian state.

At the end of World War II, following the victory of the people's system on 9 September 1944, the state's policy was directed toward the following objectives: insuring the feeding of the population by achieving at a faster pace the satisfaction of consumption requirements based on scientific nutrition norms; meet the needs of industry for agricultural raw materials; intensify Bulgaria's participation in the international division of labor by steadily increasing exports of agricultural commodities, both fresh and processed; and resolve within a short time the social problems facing the Bulgarian countryside through the elimination of major disparities between town and country and between agricultural and industrial labor.

Small private farming was unable to meet such requirements. It had to be converted into large-scale, mechanized and highly profitable farming.

The socialist reorganization of agriculture in our country was completed relatively quickly. The difficulties paralleling this reorganization were successfully surmounted as well. A decisive role in this respect was played by the clear theoretical line provided by the BCP and its leader G. Dimitrov, which emphasized the following basic stipulations:

The main prerequisite is available: A people's democratic system, headed by the powerful alliance between the working class and the toiling peasants with the leading role of the workers;

The nationalization of the land is not a mandatory prerequisite for the socialist reorganization of agriculture. The preservation of the private ownership of the land and rental payments do not hinder but assist the cooperativization process;

The agrarian reform eliminated the biggest land owners. However, it was unable to eliminate small-scale farming or to heal its organic ills: poverty, hired labor, leasing of the land and other forms of exploitation;

Under socialism the nature of the cooperative changes. Cooperative organizations and enterprises assume a socialist nature. They become similar to state enterprises despite certain differences;

Given the existence of the Soviet Union and its powerful industry, the socialist reorganization of Bulgarian agriculture became possible without awaiting the process of industrialization as was the case with the collectivization of Soviet agriculture.

The scientific analysis provided by G. Dimitrov of the general and the specific aspects of the socialist reorganization of agriculture eliminated unnecessary confusions and hesitations. The specific conditions of Bulgarian agriculture merely concretized the ways and means without reducing the effectiveness of the general principles governing the application of Lenin's cooperative plan. Thus, Lenin's general concepts obtained a new development and increased their power and influence over the reorganization of the old Bulgarian agriculture.

By providing an accurate theoretical substantiation of these basic landmarks, G. Dimitrov directed the party along the true practical way for the solution of one of the most difficult problems facing the economy of any country--the agrarian problem.

When we speak of the structuring and development of our cooperative system, we must not forget the particularly valuable experience of the peasants in the area of the cooperative movement. Long before the people's victory the peasants extensively participated in the development of various types of cooperatives, including production cooperatives. Under the influence of developing socialism in the USSR, before 9 September 1944 our country had set up over 40 production agricultural cooperatives of which 29 had remained by 9 September 1944. Thus, under the leadership of the BCP, the development of the cooperative movement in our country in the areas of credits and consumption was extended to agricultural production as well. Under the bourgeois system and capitalist conditions, the agricultural production cooperative appeared in our country following the example of the kolkhozes. Along with the remaining cooperative organizations it assumed its position as an economic organization aimed at unifying the progressive forces in the Fatherland Front. It became an effective school for the reeducation of the peasants in a collective spirit. Such party activities yielded abundant results: A tremendous capital was accumulated which, under the people's system, provided a powerful impetus and accelerated the cooperativization of the farms.

The great popularity and influence of and faith in the BCP in the villages was a powerful factor for the accelerated process of the socialist reorganization of agriculture in our country. At this point let us strongly emphasize the role of the people's intelligentsia, raised by the party and tempered in battle, rallied within the union of Bulgarian agronomists, systematically fighting in defense of the rights of the peasants, educating and directing the specialists, starting with the university, loyally to serve the people. The members of the society led the progressive mass organizations of tobacco growers, vine growers, livestock breeders, the cooperative organizations in the villages, and so on. Trained in this fighting school, and having participated in the struggle waged by the entire people against facism, agronomists, veterinarians, teachers, and cooperative workers enthusiastically began to work, with the dawn of freedom, for the reorganization and development of Bulgarian farming. This played an important role not only in the pace of cooperation but in the collective management of the TKZS [Labor Cooperative Farms] and the DZS [State Farms].

The development of Bulgarian agriculture may be divided into five stages in terms of concentration, specialization and integration:

The first stage (1944-1948) may be described as that of restoration: surmounting the damages caused by the war period.

The second stage (1949-1952) is a revolutionary period in agricultural reorganization. It was a time of the first mass collectivization and over 60 percent of the land to be brought into the cooperatives became socialized. Machine-tractor stations (MTS) were set up. Socialist ownership of productive capital became the standard base for industry and agriculture.

The third stage (1953-1958) was that of strengthening and further cooperativization of agriculture. It was a period of the total victory of socialism in the Bulgarian countryside. This concluded the overall cooperativization and socialization of production in agriculture on a socialist basis. The material and technical base expanded and the disparity between the development of production forces and existing production relations was largely surmounted. This could be accomplished thanks to the substantial material aid provided by the USSR during that period through deliveries of agricultural equipment.

The fourth stage (1959-1969) was the stage of the further strengthening and concentration of production into larger production units and enterprises, conversion to high-pace production intensification, increased specialization and enhancement of the effectiveness level. The average size of agricultural enterprises (TKZS and DZS) rose from 3,000-12,000 decares by 1958-1960 to 38,000-42,000 decares of arable land. During that period a sharp increase in the role of chemization, irrigation and mechanization was the main line of intensification. In 1965-1967 7.5-12.6 kilograms of chemical fertilizers (in terms of active agent) were applied per decare of cultivated land. Bulgarian and foreign high-yielding and high-grade strains were applied. Qualitative changes in the material-technical and production base and the combination of biological factors with chemization, irrigation and mechanization, achieved in that period, led to high and relatively stable yields from basic farm crops.

The fifth and current stage began in 1970. Its characteristic features are even higher rates of production intensification with the accelerated application of industrial technologies and production and management methods. The April 1970 BCP Central Committee Plenum adopted an expanded program for a new concentration of agriculture and for its development on an industrial basis. The Agroindustrial Complex (APK) was established as the basic form of concentration of agricultural production at this stage.

The Agroindustrial Complex is developing as the basic organization through whose continuing development the following basic problems are resolved:

The improved location and acceleration of the process of specialization and concentration as the base for large-scale machine production in farming;

Improved agricultural integration and integration between agriculture and the other sectors of the national agroindustrial complex;

The resolution of the economic, social and living problems which equalize the conditions between town and country on a high scientific and technical level in accordance with the requirements of the developed socialist society;

The training of cadres--managers, specialists and operational--for industrial agricultural production.

According to NAPS [National Agroindustrial Union] data in 1979 agriculture was organized in big agricultural enterprises as follows: agroindustrial complexes (APK) numbering 275, with an average size of arable land of 131,300 decares; scientific-production viticultural-wine-making complexes (NPLVK): eight with 145,100 decares; a fruit and vegetable complex with 309,200 decares; NPK [Scientific-Production Complex] and DSS [State Seed-Growing Farms] of the Grade Seeds DSO [State Economic Trust]: 34 with 38,400 decares; NPK of the NPO [Scientific-Production Trust] for cattle and sheep breeding: 14 with an average size of 36,000 decares of arable land.

The APK are the basic territorial economic units which are systematically and purposefully acquiring a system of intensive industrial agricultural production. Consequently, the establishment and development of the APK will contribute to the solution of the basic problems related to building a developed socialist society.

The solution of the agrarian problem, the industrialization of the country, the development of agricultural science and the training of specialists offered opportunities for the utilization of resources and provided scope for the steady improvement of technology and the application of technical progress in agricultural production.

Agricultural science plays a decisive role in determining the possibilities of available resources and technologies. Its development is most closely linked with the development of socialist agriculture and the achievements of world science. The agricultural scientists are extensively using the experience and discoveries of other countries and are developing themselves specific scientific problems related to our agricultural production. The country has a widespread network of 56 scientific institutes and experimental stations in the field of agriculture. They have specialized in accordance with typical natural and economic conditions. They employ over 1,800 scientific workers. Under the people's system agricultural science in Bulgaria was able to achieve considerable successes. So far, 484 Bulgarian strains and hybrids have been developed, 284 of which have been applied. After investigation under our conditions, a number of foreign strains and hybrids of corn, wheat, sunflowers, barley, and others have been used as well. Soviet Bezostaya 1, Avrora, and Kavkaz wheat strains and Peredovik, Smyana and Mayak sunflower strains have become quite popular.

New industrial technologies have been developed and are being applied for growing wheat, corn, sunflowers, tobacco, cotton, grapes, vegetables, and others. Our selected strains come close to the best world standards. Particularly valuable are the winter wheat strains Sadovo 1, Ludogorka, Levent, Rusalka and others, the Knezha corn hybrids, and cotton, tobacco, and other crop strains.

Large-scale soil maps have been charted (1:25,000 and 1:400,000) and the availability of variable forms of nutritional elements in the soils has been established. The building and equipment of the Soil Fertility Institute were expanded in cooperation with the FAO. The institute is engaged in soil studies domestically and abroad.

Considerable successes have been achieved in the area of plant protection. The most successful methods for fighting crop diseases and pests are being used. A beginning has been laid to the development of suitable and means for waging the struggle with biological agents.

Our animal husbandry science has made a practical contribution to the development of new and highly productive farm animal breeds, animal nutrition, and so on. Bulgarian veterinary science has achieved great accomplishments as well. Particularly noteworthy is our experience in the development of new breeds of farm animals. The specific complex scientific collectives which were organized developed within a short time valuable highly productive breeds of cattle, sheep, hogs, and other farm animals.

The agroeconomic science developed a number of basic problems of large-scale output. Zoning, forecasting, price-setting, payments, norms, and others are of decisive importance to the victory of the cooperative system and the intensive development of agriculture.

The successes and scientific achievements of ouragriculture are directly related to the development of a system of specialized scientific research institutes and experimental stations.

Bulgarian agricultural science is most closely linked with the intensification and industrialization of agricultural output. The participation of Bulgarian scientists and specialists in the training of agricultural cadres in higher educational institutions and in secondary and practical schools plays a particular role in this direction.

Bulgarian agricultural science and cadre training developed and are continuing to develop dynamically in very close cooperation with world science and practice.

The major and basic structural changes which occurred in Bulgarian agriculture were accompanied by a radical change in technical facilities. Forces and means were focused on irrigation, chemization, mechanization, use of new crop strains, and accelerated upgrading of livestock breeds. Let us strongly emphasize the efforts made to insure the comprehensive use of these four directions of technical progress in farming with a view to obtaining maximum results.

Table 1. Development of Agricultural Intensification

	1952	1960	1975	1978
Capital investments in agriculture per 100 hectares arable land, leva	1561	7801	16472	16627
Tractors (in terms of 15 hp) per 100 hectares arable land, number	2.6	8.3	28.8	32.1
Chemical fertilizers in pure substance per 100 hectares arable land, kilograms	415	3206	14327	15586
Total output per 1,000 decares arable land, leva (comparable prices)	34000	52000	102559	106260

[1] "Statisticheski Godishnik na NRB" [Statistical Yearbook of the Bulgarian People's Republic], 1979.

The productive capital per hectare of arable land rose from 362 leva in 1939 to 1,270 leva in 1975. From the qualitative viewpoint the changes are even more startling. The bulk of the old and primitive capital assets was replaced by new and more advanced tools: draft cattle, and iron and wooden plows were replaced by tractors; animal-pulled carts were replaced by motor vehicles; pack animals were replaced by machines, and so on.

In about 25 years the number of tractors (on the basis of 15 hp) rose by a factor of 15: from 8,657 in 1950 to 136,551 in 1975. Until 1950 there were no combines in agriculture. Today there are 22,562. In 1970 there were 63 hectares of arable land per tractor (15 hp); the ratio rose to 35 hectares in 1975, thus reaching the level of other countries whose ratios are as follows: GDR, 34.5; Czechoslovakia, 27.4; France, 17.9; Britain, 20.9; Italy, 28.0; and United States, 36.7 hectares.

The development of the material and technical base and of production forces in agriculture took place rapidly. All agricultural intensification factors have been developing at a fast pace (see Table 1).

Between 1960 and 1975 power availability in agriculture quadrupled. It doubled within a 10-year period (1965-1975) (see Table 2).

Table 2. Power Availability in Agriculture (per 1,000 decares arable land, hp)[1]

Year	All category farms	
	Mechanical engines and draft cattle	Including mechanical engines
1956	42	27
1960	65	56
1965	104	97
1970	148	142
1975	199	194
1978	229	224

1. Statisticheski Godishnik na NRB, 1974, 1976, 1979.

Table 3. Overall Agricultural Output[1] with 1960 = 100

Year	Total	Per Capita	Crop Growing	Per Capita	Animal Husbandry	Per Capita
1960	100,0	100,0	100,0	100,0	100,0	100,0
1965	117,1	112,2	112,1	107,5	127,3	121,9
1970	138,6	128,4	133,3	123,5	149,5	138,5
1975	160,1	144,5	144,1	130,0	191,2	172,5
1978	165,6	147,9	141,9	128,5	206,8	184,3

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1. Statisticheski Godishnik na NRB, 1961, 1966, 1976, 1979.

Table 4. Yields and Productivity of All Category Farms, Average by Period[1] (per hectare, kilogram, pieces)

Indicator	1934 - 1939	1961 - 1965	1966—1970 г.	1971 - 1975 г.	1976 - 1978 г.
Wheat	1246	1811	2743	3180	3748
Corn	1171	2509	3653	3968	3811
Sunflower	830	1136	1685	1699	1670
Sugar beets	15720	20544	32280	29276	28212
Tomatoes	23670	30891	28993	28050	25601
Milk per cow	450	1453	2211	2264	2245
Wool per sheep (gramm)	1511	2429	3300	3800	3819

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1. Statisticheski Godishnik na NRB, 1979.

The growth and qualitative changes of production forces in agriculture triggered substantial changes in the volume, structure, and pace of agricultural production (see Table 3).

The increase in agricultural output was achieved through intensive means only--by raising yields and animal productivity and increasing labor productivity (see Tables 3 and 4).

Thanks to the comprehensive use of science and technology, agriculture is successfully developing and has achieved remarkable successes in terms of the growth of overall output and increased production effectiveness. On the basis of comparable prices, between 1939 and 1976 overall agricultural output rose by a 2.5 factor. Between 1960 and 1975 overall agricultural output rose 161 percent while overall food output rose 289 percent. In terms of current prices agricultural output per capita rose from 309 leva in 1960 to 495 leva in 1970 and 557 leva in 1975.

Compared with 1948 the 1975 national income from agriculture had nearly quadrupled (3.8). It was double the 1960 output. Between 1960 and 1977 exports of agricultural commodities rose by a 2.5 factor or, together with food industry exports, by a factor of 4.8.

Bulgaria has increased its food production considerably. Thus, for example, on a 5 year average (1966-1970), compared with 1961-1965, its food production rose 131 percent whereas other averages were as follows: global, 115 percent; GDR, 120 percent; Hungary, 116 percent; Czechoslovakia, 114 percent; United States, 113 percent; France, 112 percent; Greece, 126 percent. Compared with 1961-1965, the same output for the 1971-1975 rose 139 percent in Bulgaria, 129 percent globally, 134 in Czechoslovakia, 132 percent in the GDR, 145 percent in Hungary, 127 percent in the United States, 125 percent in France, and 148 percent in Greece. Average productivity of basic crops and livestock increased several hundred percent compared with the prewar level. In terms of average wheat, corn, and sunflower yields Bulgaria ranks with countries with the highest average yields such as Denmark, The Netherlands, France, Canada, the United States, the GDR, Hungary, and others.

Labor productivity in agriculture has been rising steadily. It rose by a 3.7 factor between 1961 and 1975.

In 1978 there were about one million people employed in agriculture or 24.5 percent of the total working force in the country. However, it accounted for over 36 percent of all commodity stocks in domestic trade and about 30 percent of exports. Between 1976 and 1978 the average output from a total of 47 million decares of arable land was as follows: grain, 8 million tons; fruits, 2 million tons; vegetables, 1.6 million tons; meat, 700,000 tons; and oriental tobacco, 118,000 tons. Achievements in the development of agriculture and the food industry enabled us to successfully resolve two basic problems of our national economy: first, to insure the supply of the population with farm products, fresh and processed, in accordance with enhanced living standards; second, to allocate considerable quantities of agricultural products for export. In terms of the production of basic food products per capita the Bulgarian population is far above average global data and is equal or close to the levels of the most developed countries. The production of some goods per capita in the world and in the country in 1976 was as follows:

	Global	Bulgaria
Grain	378	978 kilograms
Meat	29	84
Milk	107	207
Eggs	5.9	10.6

The highest indicators for grain are those of the United States with 1,200 kilograms, Denmark with 1,165 kilograms, and Sweden with 670 kilograms. For meat the highest indicators are those of Denmark with 212 kilograms, The Netherlands with 130 kilograms and the United States with 116 kilograms. For milk: Denmark with 1,025 liters, The Netherlands with 768 liters and France with 564 liters.

The rates of increase in the production of food clearly indicate that by 1980 the scientific nutritional norms will be reached for basic staples; in the case of individual products this will be achieved in the 1981-1985 Five-Year Plan (see Table 5).

Table 5. Nutritional Norms and Consumption of Basic Food Products (kilograms, pieces, liters)

Product	Scientific norms based on December program	1978	
		Per capita Production	Per capita Consumption
Meat and meat products	80.0	82	61.1
Fish and canned fish	10.0	..	7.0
Milk and dairy goods	360.0	220	156.9
Eggs	265.0	252	197.0
Vegetal oils	13.0	..	14.1
Flour	100.0	300	155.6
Rice	4.0		4.2
Beans and other leguminous	6.0		4.0
Sugar and confectionary goods	32.0		35.0
Vegetables, total	180.0	200	93.8
Potatoes	40.0	44	23.1
Fruits, total	200.0	230	112.5

An entire set of indicators characterized strength and dynamics of our socialist agriculture. A great deal has been achieved compared with capitalist Bulgaria and with a number of nonsocialist countries throughout the world. However, looking ahead and assessing our achievements on the basis of the criteria of mature socialism, our conclusion would unhesitatingly be that such achievements are merely one of the numerous important steps of progress. Displaying new tireless revolutionary enthusiasm, the party is opening new horizons and pointing at new peaks. Age-making new scientific accomplishments of the human genius are being implemented in the socialist society and consciously used for the good of man. The new horizons in agriculture are particularly important today, when the peoples of the world are struggling for the preservation of the peace and against unemployment, poverty, food shortages, harmful living conditions, environmental pollution, housing shortages, and so on.

Today the world's population exceeds four billion of which about 40 million die of hunger every year. Predictions indicate that by the year 2000 the population on earth will total 7.5 billion. In order to maintain the present nutritional level agricultural production must be doubled. As a result, one billion people will be hungry and the number of those who die of hunger will rise from 40 to 80 million people. In order to improve human nutrition throughout the world the production of food must at least quadruple. These most general figures alone indicate the great importance of agriculture.

This makes the successes of our socialist agriculture even more important as the basis for the future development of our output.

The forecasts on the development of agriculture and the food industry by the year 2000 are based on the scientific and technical achievements of Bulgarian and global agricultural science. In most general terms, scientific predictions are characterized by the following indicators: By the year 2000 overall agricultural output will rise by a 2.2-2.5 factor compared with the 1971-1975 average annual data while net output will rise, respectively, by a factor of 2-2.3. Such predictions are based on the rational utilization of land, water, and fuel resources in the country and the steady improvement of current and future farming technologies. They call for the conservation of labor and materials per unit of output through improved biological, technical, organizational, economic and social production factors.

Current experience in this direction confirms the reliability of the indicators included in the forecast and the plans. In 1977 alone agriculture and the food industry applied 244 scientific and technical accomplishments with annual economic savings totaling 150 million leva. The more important among them are the following: 188 new or improved technologies with annual savings of 60.8 million leva; and 14 new or improved various crop strains with annual savings of 40.2 million leva.

The scientific and technical forecasts formulated for 1990-2000 call for the application of scientific achievements in production yielding considerable savings. This includes new soil cultivation systems, 114,000 leva; new wheat strains, 80,000 leva; cold-resistant grapevines, 5.6 million leva; new irrigation technology, 10.6 million leva; technologies for industrial tomato production, 11.4 million leva; technologies for industrial fruit production, 8.2 million leva; and technology for industrial fodder production, 10.2 million leva.

The basic directions followed in the development of science and technical progress in agriculture in the Eighth Five-Year Plan (1981-1985) and through 1990-2000 are the following: To insure the most rational utilization of the land and the biological possibilities of farm crops and livestock. Priority will be given to research for determining the genetic-production classification of soils, regulating circulation of nutritional substances in the soil for the development of optimum fertilizer norms; the improvement and development of new industrial technology in crop growing; the application, development, and utilization of new strains; the intensification of research on biological means for fighting diseases and pests; the establishment of a biologically and economically optimum irrigation regimen and the extensive application of highly productive machine systems; the improvement and development of new industrial technologies in animal husbandry and fodder production, and the expansion and improvement of hybrid animal husbandry.

Cadre training--scientific workers, specialists with higher and secondary training and highly skilled production experts--will face new requirements.

The implementation of the 1990 program, on a longer-range basis, will greatly depend on the resolution of the problems facing Bulgarian science and its successful cooperation with world science.

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RESULTS OF COAL RESERVES STUDIES DISCUSSED

Sofia SPISANIE NA BULGARSKATA AKADEMIYA NA NAUKITE in Bulgarian No 4, 1980 pp 31-45

[Article by Academician Yovcho S. Yovchev: "On the problem of Bulgarian Raw Material Fuel-Energy Potential Related to Extractable Coal Discovered in the Country"]

[Text] Following the liberation of Bulgaria from the age-old yoke of the Ottoman Empire, one of the many problems to be resolved by the young capitalist state was the study of the geological structure of the country with a view to the search for minerals. Naturally, even under the Turkish rule, particularly following the powerful development of capitalism which began following the French revolution, the problems of the raw material base in the highly developed capitalist countries were among the first requiring a solution for such development. Naturally, even before that time countries such as England (one of the most developed countries at that time) were interested in this problem which was the basis for the development of great interest in colonies displayed both by England and the remaining capitalist countries. It is particularly now, in the age of development of imperialism, that the factor of extractable raw materials is of decisive global significance which could be noted today by any politician, economist, or even common man, for the latest crises developing today under capitalism are also related to raw material problems.

Published data show that before the liberation of our country scientists from the Western countries came to study the geological structure of the Balkan Peninsula ruled by the Ottoman Empire. They included scientists from France, Germany, and Austria-Hungary, countries which, to one or another extent, were interested in the raw material problem as a main factor. However, studying the geological structure as a first stage, they greatly contributed to the study of Balkan geology.

These studies made it possible to undertake, as early as the 1860s, an attempt to summarize Balkan geology. This was most successfully accomplished by the French geologist Ami Boue who synthesized the material in such a way as to chart the first geological map of the Balkans.

It is accepted that the beginning of studies of the geological structure and of minerals in the country started in the 1880s, following the appointment of the first geologist in the country, G. Zlatarski. However, due to the lack of funds unavailable to the Bulgarian youth, he was unable to organize and develop geological studies in Bulgaria. He studied individual problems of the geological structure of the country and publications on geological research in the Balkans. His main task, however, as head of the geological service, was to supply information to those who were interested at that time in the opening of quarries and chart and protect perimeters.

At the beginning of the 20th century a small number of geologists began to work more intensively on the geological structure of the country, particularly when the work was joined by Professors G. Bonchev, L. Vankov, St. Bonchev, and others.

At that time G. Zlatarski was intensively working on summarizing the published geological material, as a result of which he charted the first geological map of the country on a scale of 1:300,000. Naturally, however, the studies were conducted within the limits of the possibilities of the state and of the necessary financial means used for the procurement of equipment and cadre training. However, the state was unable to allocate the necessary funds for major geological studies of minerals and the discovery of coal, ore, and nonmineral deposits.

Let us note that almost simultaneously with the charting of the geological map by G. Zlatarski, the Serbian geomorphologist and geographer Yovan Tsviych, working on Balkan geomorphology, visited Bulgaria, as a result of which he provided the first morpho-tectonic geological outline of the country which consisted of a morpho-tectonic zoning.

Still at that time individual coal and, partially, ore extraction were taking place on a significant scale. Somewhat later more significant coal extraction was developed, for the needs of the railroads increased and in order to avoid coal imports.

However, a considerable impetus in the exploitation of minerals was noted after the first imperialist war, between 1918 and the liberation of our country from capitalism and fascism on 9 September 1944. Within this relatively long period coal extraction for domestic needs, mainly for railroad transportation and, partially, for fuel for the urban population, increased. Many new private and a lesser number of state perimeters were developed, including coal basins and ore deposits most of which exploited by private and foreign capital. At that time the biggest coal extraction areas were the Pernik State Mine followed by Bobov Dol, Maritsa-Zapad, Pirin, the Burgas Mine and the Balkan Mines.

However, even at that time reserves of coal and ores, for whose study the necessary funds were not allocated, were insignificant. The Pernik State Mine alone had greater funds available as a result of which that basin showed certain industrial deposits. Somewhat later, toward the end of the period, certain yet minor studies were undertaken of coal deposits in other state mines and even in some privately owned deposits.

A similar situation prevailed in the case of ore deposits, even though the scale of prospecting within that period was considerably lower. The Granitoid Company alone allocated some funds for studies. This led to the discovery of possibilities at the Pirin Mine and the ore deposits in the Rodopi Mountains.

In the interest of truth we must note, when discussing cadre possibilities in the area of the extraction and study of minerals and the detailed study of the geological structure of our lands, that the country had relatively well-qualified engineers and technicians, particularly in the period following World War I. They included engineers Konyarov, S. Toshkov, B. Radoslavov and many others. Some of them, studying the problems of the geology of minerals and their forecasts, wrote a number of interesting summarizing works. For example, Engineer Konyarov wrote interesting works on coal and iron ore deposits; Engineer S. Toshkov was the first to write a book on mineral ores. Many other engineers published individual articles on the extraction of minerals and, in some cases, on their geology.

During that period a substantially greater number of works were published on the country's geological structure. Particularly noteworthy were the works of scientists and geological specialists such as G. Zlatarski, G. Bonchev, L. Vankov, St. Bonchev, P. Bakolov, Str. Dimitrov, El. Koen, Ts. Dimitrov, Ek. Bonchev, V. Tsankov, B. Kamenov, R. Beregov, A. Yanishevski, Sht. Zhelev, and many others. This galaxy of scientists and specialists was the aktiv of our country engaged in the study of its geological structure before our liberation from capitalism on 9 September 1944. Let us note that other than the works of Konyarov and some others no major or serious summarizing works on mineals have been published.

Toward the end of that period there was no scientifically deeper synthesis of the geological structure of the country. However, the need for such a synthesis of the geological structure and of minerals became particularly urgent after 9 September 1944. That is why, on the recommendation of Soviet scientists and specialists, it was suggested that the geological service which existed until 1948, headed by Ts. Dimitrov, to be assigned such a summation on the basis of all available data related to the country's geology and mineral deposits. This was assigned to a collective headed by Dr Koen and Ts. Dimitrov, with the participation of Str. Dimitrov, Prof G. Bonchev, Prof V. Tsankov, Prof B. Kamenov and some others. The result of their efforts was a major work on the foundations of Bulgarian geology with a geological map on the scale of 1:500,000, charted by B. Kamenov and edited by El. Koen. This work was the basis for the establishment of the geological service and related to the further detailed study of the geological structure and minerals in the country. It has still not lost its scientific significance.

Such was the situation of the geological knowledge about the country and the state of the study of minerals before 9 September 1944.

Let us cite a few figures to illustrate the condition of the insufficient study of a great variety of minerals over this long period of capitalism following the liberation, for no such figures have been provided. Thus, for example, ore deposits, mainly polymetallic in the Rodopi ore deposit area were assessed at one million tons; copper ores, several tens of thousands of tons; iron ores, several hundred thousand tons; lignites, 214 million tons; hard coal, 150,200 tons; anthracite, several tens of thousands of tons. The annual output of all types of coal did not exceed 3-3.1 million tons; lignite extraction did not exceed 80,000-100,000 tons; brown coal, 2.7-2.8 million tons; hard coal, about 160,000 tons; and anthracite, about 15,000-20,000 tons.

Naturally, such reserves could not constitute a foundation for a socialist industry and, particularly, of heavy industry such as the power industry, metallurgy, chemistry, construction, and machine building, without which the development of the country's economy under socialist conditions was impossible. This made it necessary for the people's regime, the BCP Central Committee, the Fatherland Front and the government to resolve, as the first and immediate task, problems related to the development of the necessary mineral raw material base. This was undertaken gradually, after the people seized the power.

However, the decision of the Fifth BCP Congress provided at that time a particular impetus for the solution of the problem. It substantiated the need for the development of a socialist industry and the measures which had to be taken in mining and geological surveys. However, the development of this project in accordance with the implementation of these decisions in such a major area required large funds which were unavailable to our country at that time. Thus, for example, the need for funds, cadres, equipment, preparatory and laboratory facilities, and so on, required that the necessary steps be taken for normal geological surveys despite such difficulty conditions. Let us note here, yet once again, that the geological surveys conducted under capitalist conditions, particularly regarding the study of minerals, were on a very low scientific-methodical level. This particularly applied to the absence of any scientific-methodical base: the lack of highly skilled cadres and the virtual absence of equipment and instruments. Under such conditions we were unable to implement the decisions of the Fifth BCP Congress. These problems could be resolved only with Soviet help.

That is why we asked for USSR help which was granted. In order to carry out our assignments the country's geological service had to be reorganized on the basis of the new Soviet scientific principles governing geological work in the country, after which the general lines of work had to be earmarked along all basic directions. This included the detailed study of the country's geological structure, and geological surveys to determine the deposits of coal, ores, and non-mineral deposits the respective geological prerequisites and criteria for which existed in the country. In order to implement all this, at the beginning of 1948, following the reorganization of the geological survey service, we were given Soviet aid which, considering the particular urgency of the need to rapidly find and prove the existence of industrial deposits of nonferrous and ferrous metals, had to be used most efficiently. For this reason it was concentrated on the study of polymetallic deposits in the Rodopi Mountains and of copper in the Burgas area. To this purpose a Soviet geological expedition was set up consisting of Soviet and Bulgarian specialists. Later, toward the end of 1949, the expedition was assigned the study of petroleum and gas deposits in northeastern Bulgaria. Our geological survey service dealt with all remaining types of ores and with nonferrous metals outside the Rodopi ore deposits area and the Burgas ore deposits region. Tremendous geological survey operations were launched for virtually all types of minerals and for the geological mapping of the country on a scale of 1:25,000 and 1:100,000.

As a result of all this, at the beginning of the 1950s surveys for coal and ore and nonmineral deposits began to yield specific positive results: Coal reserves grew extensively and reserves of polymetallic ores, copper, ferrous metals and nonmineral deposits and construction materials increased sharply. Substantial coal deposits were found in the already known East Maritsa Basin and in the other already known coal basins. The first petroleum deposit was discovered. Great reserves were discovered of gypsum, kaolin, fire-proof clays, and a number of other nonmineral deposits and sources of construction materials. In that period the basic deposits for the development of a ferrous metallurgy were discovered as well--the Martinovo and Krumovo iron ore deposits and, particularly, the Kremikovtsi deposits. This largely resolved the problem of the development of our ferrous metallurgy. At that time we also discovered industrial deposits of polymetal ores. This enabled us to develop our polymetal industry and the discovered copper ore deposits enabled us to develop our copper extraction industry, the chemical industry, and the construction industry, on a broad scale, particularly in terms of cement, fire-proof materials, the porcelain and glassware industries, and many others. The construction of a number of big coal mines and electric power plants was undertaken on the basis of the coal deposits.

The historical April 1956 plenum played a particular and a decisive role in this new major impetus given to the development of geological surveys and the development of heavy industry. We were helped by Comrade T. Zhivkov personally in the implementation of its decisions related to the geological survey of the country. This enhanced the enthusiasm of the geological surveyors, as a result of which the new petroleum and gas deposits were discovered in the central and western parts of northern Bulgaria. In connection with the developed geological surveys for petroleum and natural gas a number of survey drills were made leading to the discovery of the Dobrudzha coal basin with its very big coal deposits. Other such drills led to the discovery of substantial gypsum deposits in the vicinity of Vidin and Oryakhovo and of the big manganese ore basin near Obrochishte Village in Tolbukhin Okrug. All in all, the results of the search for petroleum and natural gas led to the discovery in northern Bulgaria of no less than 20 hot mineral water springs, mainly in the coastal areas of Varna and Tolbukhin okrugs.

The geological studies related to the mapping of the country resolved a number of important regional geological problems while the materials of the studies were summarized as a result of which a number of proper standard works were created together with a number of very important geological documents such as the various types of geological maps on scales of 1:25,000, 1:50,000 and 1:100,000. On this basis the following geological maps covering the entire country were charted and published: A 1:200,000 scale geological map of the country; a 1:200,000 scale tectonic map of the country; and a 1:200,000 scale gravimetric map. On the basis of these fundamental geological documents and materials obtained on the country's hydrogeology, a hydrogeological map of the country on a scale of 1:200,000 was issued together with two other specialized hydrogeological maps on a scale of 1:200,000.

Special metalogenic maps were charted as follows: Metalogenic zoning of Bulgaria on a scale of 1:500,000; metalogenic-forecast maps for ferrous and nonferrous metals on a scale of 1:500,000; forecast (area) maps on coal deposits and a petroleum-natural gas map on a scale of 1:500,000. All these metalogenic and other maps and the map of minerals on Bulgarian territory were based on the geological map on a scale of 1:500,000. All this shows that the foundations were laid for new directions in the search for basic types of minerals.

Since 9 September 1944 no less than 1,000 works have been published on the country's geological structure; the Central Geology Fund of the Committee for Geology received about 7,000 papers as a result of studies reflecting our work on geological surveys with a detailed study of the geological structure of the country and its minerals.

Today we may be proud of the 35 years of work of our socialist geological service, not only because of the creation of a raw material base for the development of the industrial power of the country, which is the main thing now, but also because through the study of the geological structure of the country we are offering a base for its study by the future generations, something not available to many other countries.

The tremendous achievements of our geological science and studies in the country earned universal recognition not only in the socialist but the capitalist countries. Currently the country's institutes are still extensively at work on scientific problems related to its geological structure and of directions aimed at the discovering of new deposits of numerous types of minerals, accomplished today under relatively more difficult conditions. Both in terms of geological studies, whose purpose is to discover and prove reserves, as well as problems of the country's geological structure, today we have great facilities through the use of the latest research methods, such as geophysics, which has developed in our country to a tremendous extent and has a powerful scientific and technical base, as well as through geochemistry, using the latest methods and proper laboratory facilities. The older methods such as the stratigraphic, structural, lithological, petrological, paleontological, chemical, and others are being steadily improved and used with the proper cadres, laboratories, and equipment.

Speaking of the cadres used in promoting the powerful development of geological studies, let us note that currently the army of geological prospectors in our country numbers from 10,000 to 12,000 workers, specialists and scientists, 2,000 to 3,000 of whom are engineering-technical personnel. Among the latter, geologists and geophysicists number over 1,000 people with higher education.

II

We already reported our achievements in the field of geological studies conducted since 1948. The purpose of this article, however, is to characterize most briefly the fuel and energy potential on the basis of extractable coal discovered in our country within that period.

Some 67 coal-bearing areas in the country were studied containing various types of deposits reflecting, to one or another extent, interesting coal-bearing features. In the overall number of areas studied in the country, broken down by individual types of coal, the picture was as follows: Deposits and basins of lignite were found in 15 areas considered of the greatest interest; deposits and basins of brown coal, in 5; deposits and basins of coal, in 8, among which the deposits of Vrushka Chuka in the Kula area, and Zeleni Grad in the Belogradchik area are considered exhausted; anthracite deposits and basins, in 3, of which the Draganitsa has been worked out.

The overall area of the studied coal-bearing areas in the country is shown in the data of Table 1.

Table 1.

(a) Площи	(b) Лигнитни въглища	(c) Кафяви въглища	(d) Черни въглища	(e) Антрацитни въглища
1. Обща площ на басейните, кв. км.	8000 = 100%	5896 = 100%	720 = 100%	215 = 100%
2. Площ на басейните, в която е проучено, кв. км	2500 — 30%	1202 = 20%	240 = 30%	20 = 10%
3. Проучена площ с промишлени запаси	272 = 3,5%	95,4 = 1,6%	180 = 30%	6,5 = 3%
4. Площ за търсене на нови находища, кв. км	4250 = 54,5%	5024 = 83,5%	540 = 46%	200 = 93%

Key:

(a)	area	1.	total basin area, square kilometers
(b)	lignite	2.	studied area of basins, square kilometers
(c)	brown coal	3.	studied areas with industrial deposits
(d)	coal	4.	area for searching of new deposits, square kilometers
(e)	anthracite		

On the basis of these studied areas the quantitative and qualitative deposit indicators may be determined in accordance with the data in Table 2. These data show that lignite deposits belonging to the industrial extractable category, together with forecast quantities, total 4,703,308,000 tons. Converted in terms of conventional fuel units (7,000 kilocalories), on the basis of variable and differentiated computations (from 1,300-1,600 to 2,500 kilocalories) these deposits show reserves of 914 million tons of coal in conventional fuel of categories $A+B+C_1$, and, respectively, 155 million tons for category C_2. The anticipated deposits of this type of coal, recomputed in conventional fuel, are assessed at 550 million tons.

All lignite indicators are assessed at 1,620,000,000 tons of conventional fuel.

The brown coal deposits shown in Table 2, computed on the same basis as the lignites, with a respective caloric value (3,500 kilocalories), for all categories, account for about 216 million tons of conventional fuel.

A recomputation of coal deposits as shown in Table 2, again in conventional fuel for industrial and extractable categories, shows a total of 1,583,000,000 tons of this high-grade fuel. Adding to this indicator the coal reserves of the L-coking coal, also recomputed in terms of conventional fuel, conventions fuel reserves of such coal would total 2,200,000,000 tons. Naturally, this does not include forecasts which are not shown in Table 2 and which are currently assessed at about 600-700 million tons of conventional fuel.

Table 2

(1) Тип въглища	(2) Басейн, находище	(3) Балансови запаси по състояние 1. 1. 1979 г.				
		(4) пром. кат. A + B + C₁		(7) перспект. кат. C₂		(8) всичко A + B + C₁ + C₂ хил. т.
		(5) хил. т.	(6) Aᵈ, %	(5) хил. т.	(6) Aᵈ, %	
(12) Лигнитни	(13) Калчински басейн	6803,9	29,7	—	—	6803,9
	(14) Разложки басейн	62918,2	26,6	2120,4	12,6	65038,6
	(15) Кюстендилски басейн	23830,2	35,4	3225,0	39,0	29055,2
(16) Лигнитни	(17) Ломски басейн	554278,0	36,0	1115839,0	39,3	1670117,0
	(18) Софийски басейн	889092,4	29,9	17877,0	26,7	906969,4
	(19) Чукуровски басейн	9244,6	31,1	—	—	9244,6
	(20) Бургаски басейн	44447,1	35,0	—	—	44447,1
	(21) Храбърски басейн	3164,1	24,6	—	—	3164,1
	(22) Алмировски басейн	35677,8	39,9	7000,0	33,2	42677,8
	(23) Самоковски басейн	31969,0	27,6	—	—	31969,0
	(24) Станянски басейн	27903,1	27,7	—	—	27903,1
	(25) Източномаришки басейн	2791774,8	29,3	5774,1	32,8	2797548,9
	(26) Западномаришки басейн	156139,5	32,7	39446,0	28,7	195585,5
	(27) Елховски басейн	—	—	602901,0	30,3	602901,0
	(28) Карловски басейн	—	—	—	—	—
	(29) Всичко лигн. в-ща	4084964,7	29,7	678343,5	30,2	4763308,2
(30) Кафяви	(31) Ораново-Симитл. басейн	9800,1	18,3	22126,2	21,9	31926,3
	(32) Пирински басейн	9314,3	33,8	—	—	9314,3
	(33) Черноморски басейн	65907,6	35,0	15520,2	26,0	81427,8
	(34) Бобовдолски басейн	182307,4	34,1	34385,4	41,4	216692,8
	(35) Пернишки басейн	57675,5	48,8	19455,5	38,0	77131,0
	(36) Рило-Доспейски басейн	101,6	36,0	—	—	101,0
	(37) Николаевски басейн	8358,5	41,0	—	—	8358,5
	(38) Всичко кафяви в-ща	333465,0	33,1	91487,3	33,3	424952,3
(39) Черни	(40) Добруджански басейн	—	—	1200000,0	—	1200000,0
	(41) Проучв. у-к Сухострел	498,7	35,5	—	—	498,7
	(42) Зеленград	428,2	34,4	271,2	37,2	699,4
	(43) Горно Озирово	916,4	37,2	521,9	36,5	1438,3
	(44) Проучв. у-к Трън	289,0	32,7	—	—	289,0
	(45) Балкански басейн	23733,4	33,2	16354,4	30,6	40092,8
	(46) Проучв. у-к Сливница	29,2	44,6	—	—	29,2
	(47) Всичко черни в-ща	25899,4		1217147,5	30,8	1243047,4
(48) През 1980 г. се очакват нови прогнозни запаси, главно по Добруджанския басейн						
(49) Антрацитни	Свагенци (50)	173,1	32,0	—	—	173,1
	(51) Свогенски басейн	9066,5	34,1	11895,0	36,9	20961,5
	(52) Проучв. у-к Селце	851,3	26,3	—	—	951,3
	(53) Всичко антрац. в-ща	18190,9	33,3	11895,0	36,9	22085,9

(54) * Запасите на Ломския басейн са заведени като извънбалансови поради сложни и неизяснени минно-технически условия и не са включени в общото количество на балансовите запаси към 1. 1. 1979 г.

[Key on following page]

Table 2 (continued)

(9) Прогнозни запаси	(10) Общо запаси, хил. т	(11) Качествени показатели				
		S^r, %	C^r, %	V^r, %	W^p, %	Q^p, %
—	6803,9	1,08	67,5	49,1	41,7	2240
	65038,6	0,81	64,8	55,4	39,0	2400
	29055,2	5,07	66,9	51,0	26,6	2560
1000000,0	1000000,0	1,53	64,7	54,9	44,1	1750
800000,0	1706969,4	2,50	64,5	52,0	48,5	1750
10000,0	19244,6	1,00	64,3	57,0	33,0	2530
	44447,1	1,71	60,9	61,0	47,5	1700
	3164,1			—	—	—
	42677,8	2,20	62,3	53,0	52,5	1230
	31969,0	1,59	—	47,8	54,6	1400
	27903,1	2,77	61,0	46,8	52,5	1570
	2797548,9	3,98	65,0	55,8	50—60	1600
100000,0	295585,5	5,0	64,5	54,8	40,0	1700
430000,0	430000,0	8,20	61,0	53,0	55,0	1550
60000,0	60000,0		—	—	—	—
2400000,0	6560407,2					
	31926,3	2,80	66,0	48,3	80,4	3150
	9314,3	2,15	70,8	47,8	15,5	4690
15520,2	81427,8	4,43	68,8	50,0	20,5	3350
	216692,8	2,37	72,7	46,2	15,2	3680
	77131,0	1,39	77,5	43,5	15,0	3440
	101,0			—	—	—
	8358,5	2,14	73,3	40,6	9,4	3970
15520,2	424952,3					
		0,73				5000
	1200000,0	5,46		22—49		7000
	498,7	3,13		28,8	2,1	5880
	699,4	4,5	80,0	38,0		
—	1438,3	4,33	87,5	30,3	2,2	4580
	289,0	3,46	82,5	26,7		
		1,5				
	40092,8	3,2	83—90	10—35	3—6	5000
	29,2	6,93	81,5	38,2	4,4	3230
	173,1	3,68		3,1		
**	20961,5	0,48	95,8	5,1	9,0	4550
	951,3					
—	22085,9					

* През 1980 г. ще бъдат изяснени геолого-структурната обстановка и перспективите на басейна.

(55)

[Key on following page]

Key to Table 2

(1) Type of coal
(2) Basin, deposit
(3) Balance reserves as of 1 Jan 1979
(4) Industrial category $A+B+C_1$
(5) Thousand tons
(6) A^c, percent
(7) Prospective category C_2
(8) Total $A+B+C_1+C_2$, thousand tons
(9) Forecast reserves
(10) Total reserves, thousand tons
(11) Quality indicators
(12) Lignite
(13) Kalchinski Basin
(14) Razlog Basin
(15) Kyustendil Basin
(16) Lignite
(17) Lome Basin
(18) Sofia Basin
(19) Chukurovo Basin
(20) Burelski Basin
(21) Khraburski Basin
(22) Aldomirov Basin
(23) Samakov Basin
(24) Stanyanski Basin
(25) East Maritsa Basin
(26) West Maritsa Basin
(27) Elkhovo Basin
(28) Karlovo Basin
(29) Total lignite
(30) Brown
(31) Oranovo-Simitli Basin
(32) Pirin Basin
(33) Black Sea Basin
(34) Bobov Dol Basin
(35) Pernik Basin
(36) Rila-Dospeyski Basin
(37) Nikolaevo Basin
(38) Total brown coal
(39) Coal
(40) Dobrudzha Basin
(41) Survey sector Sukhostrel
(42) Zelenigrad
(43) Gorno Ozirovo
(44) Study sector Trun
(45) Balkan Basin
(46) Study sector Slivnitsa
(47) Total coal
(48) New forecast reserves are expected mainly in the Dobrudzha Basin in 1980
(49) Anthracite
(50) Stakevtsi
(51) Svoge Basin
(52) Study sector Seltse
(53) Total anthracite
(54) The Lom Basin reserves are considered nonbalance because of complex and unclarified mining-technical conditions and are not included in the overall amount of balance reserves on 1 January 1979.
(55) The geological-structural circumstances and possibilities of the basin will be determined in 1980.

Therefore, according to the data for all coal categories converted into conventional fuel, the overall coal fuel potential may be assessed at four billion tons.

The connection between our coal basins and their reserves with the individual lithologo-stratigraphic formations and their age may be characterized by the following data: Lignites are related to Pliocene formations; the brown coal is almost exclusively related to deposits from the upper Eocene. The coal basins are related to the following: Old tertiary (a single very small deposit--the Sukhostrel), deposits of the upper cretaceous (the Balkan Coal Basin), and deposits of the middle and lower Jurassic--Lias-Dogger (Ozirovo, Tuden, Slivnitsa, and others), nonindustrial deposits; the coal basins and the anthracite deposits and basins are related to deposits of the upper Carboniferous.

The biggest reserves of lignite are concentrated in the following basins: Maritsa-Iztok, Sofia, Lom, West Maritsa and Elkhovo. The relatively biggest brown coal basins are the Pernik, Bobov Dol, Pirin and Burgas. The biggest coal basin is the newly discovered Dobrudzha Basin and the drastically smaller Balkan Basin. Small industrial deposits of anthracite are found in the Svoge Basin.

The breakdown of the coal basins indicates that 13 out of 30 okrugs have coal basins and deposits and 10 okrugs have more significant industrial deposits.

In terms of origin our coal may be graded as follows:

1. All lignite basins are of the so-called platform type--fresh water swamp-lake.

2. Brown coal basins are of the swamp-lake platform type. The Burgas coal basin alone is of the limno-brackish seashore-type or mixed-type basin.

3. Virtually all anthracite basins are of the geosynclinal type--sea coastal.

Genetically, in virtually all our basins the coal was formed from humus, i.e., the residue of higher vegetation. In the Burgas Basin alone the coal is partly humus and partly humus-sapropelic.

Basic data on the chemical-technological characteristics of the coal may be found in Table 2. Naturally, in this case we are unable to provide data on the chemical structure of the inorganic part of the coal (A_c).

The overall fuel-energy coal potential computed on the basis of kilocalories is assessed at over 28 trillion kilocalories.

III

In order to describe the contribution of our geological studies conducted in recent years on the discovery of new coal deposits, we must consider, even though in its most general aspects, the description of the Dobrudzha coal basin and its deposits confirmed 11 years ago. We believe this to be the greatest discovery made so far in the area of Bulgarian geological surveys.

In the course of our search for petroleum and gas in northern Bulgaria and, particularly, in the course of the special so-called support drills made in 1963, we came across strata bearing highly caloric coal in the area between Kavarna and Balchik, at a depth of 1,300 meters. We discovered about 60 seams some of which up to 10 meters thick. Some of the seams showed coking qualities. Coal was found in the upper carbonatious deposits spread over an area of no less than 200 square kilometers.

Let us note at this point that in the course of our search for petroleum and natural gas in northern Bulgaria such drilling enabled us to discover substantial deposits of manganese in the Oligocenic deposits (in the vicinity of Obrochishte Village, Tolbukhin Okrug), as well as substantial gypsum deposits in Vidin and Vratsa okrugs. New salt deposits were discovered, unfortunately located at a great depth (about 3,200 meters) not far from Omurtag. Let us also note that dozens of mineral and hot water mineral springs were discovered throughout northern Bulgaria and, particularly, in the coastal areas of Varna and Tolbukhin okrugs.

Following the discovery of coal in the Dobrudzha Basin deep drilling was immediately undertaken for preliminary geological surveys, as a result of which by the end of 1969 some 60 drills had been completed and a tremendous amount of geological data had been collected, processed, and presented in a special report submitted to the Central Geological Fund of the Committee for Geology. Because of the depth of the coal seams and the great complexity of the geological structure of the basin, we asked the help of highly skilled Soviet specialists who, together with Bulgarian geologists conducted the studies and drafted the report. The study determined that the basin has substantial deposits of coal assessed at 1,200,000,000 tons of high-grade coal.

We are including here the composite diagram of the geological crosscut of the basin (Figure 1). This makes it unnecessary to describe the geological structure in this article, for the column of the crosscut offers an idea of the basin's geology and the coal-bearing strata in the individual layers of the upper carbonaceous.

At this point, however, we must pay attention to one of the greatest difficulties in the development of this big coal basin: the five water-bearing strata: in the Sarmatian, Eocene, Lower Cretacious and Upper Jurassic, Lower Jurassic and the Carboniferous complex. The thickest water stratum is the Malm-Valanginian, 500-700 meters thick, whose middle area is highly cavernous, filled with water with a very high flow rate. It is this layer that presents difficulties in the drilling of shafts. The second difficulty in developing the basin is its tectonic block structure (Fig. 2).

As shown in the crosscut, the coal in the upper carbonaceous deposits is found in three [illegible] formations. The first, identified by the geologists as the N formation consists of seven coal seams of industrial significance with estimated reserves of about 300 million tons. The coal of this formation is high-caloric (6,000-7,000 kilocalories) but has no coking qualities. In the future, as the reserves of this formation are developed, they will be used as high energy raw material. This formation is in the uppermost part of the coal deposits.

The N formation is followed by the M formation. It consists of 12 thick seams which are also low sulfuric and high-caloric coal (6,000-7,000 kilocalories), slightly more metamorphized in some of the lower carboniferous areas. One of the manifestations of this fact is that through layering such coal could yield up to [illegible] percent of the overall coking amount. The M formation deposits are assessed at about 900 million tons. Therefore, the overall deposits of the N and M formations total some 1.2 billion tons, provisionally classified as category C_2.

Below the M formation is the L formation containing about 41 seams which are considered by the geologists industrially unuseable because of their thinness. Studies indicated that the seams of the L series have coking qualities. Nevertheless, until last year this series was not properly considered. Let us mention in this connection, however, that one of the basic stipulations determining the

the assessment of the deposits, and is considered one of the main criteria, is the thickness of the seam.

According to both Soviet and Bulgarian methods for computing reserves through the criterion of thickness, the minimum acceptable thickness is 0.8 meters for coal and 0.7 meters for coking coal. At the time of the geological surveys international coal prices were relatively low and coal extraction had declined in virtually all countries with the exception of the USSR, Poland, the United States and China who were gradually increasing their output. The reason was that the relatively inexpensive petroleum and natural gas products, produced on a global scale, were expected to satisfy for many dozens of years ahead the needs of mankind for fuel and energy and chemical raw materials. This view and the erroneous approach adopted in assessing petroleum consumption were the reason for which no serious attention was paid to the development of the Dobrudzha Basin or to the geological processing of the L formation deposits which were not estimated. In the course of our research related to the study of the geochemical structure of the inorganic component of coal in the country (A_c), including the Dobrudzha coal basin, looking at the materials of the latter we realized that the various data related to the computation of reserves and the overall assessment of the L series suffered from a very substantial shortcoming. The detailed study of the data contained in the respective documents enabled us to determine, together with Engineer Iv. Bozhinov, with whom we cooperated, that the L formation had the potential for great reserves of coking coal. Following the study of all data and the orientational computations, we were able to definitely determine that the reserves amounted to hundreds of millions of tons. I drafted a special report to Minister Prof Stamen Stamenov and to Candidate of Geological and Mining Sciences Y. Kunev, chairman of the Committee for Geology, along with suggestions I submitted on the determination of such reserves. Both agreed, as a result of which, in accordance with my suggestions, a collective was set up which will complete the work by the end of this year. The data so far processed, however, enabled us to determine the specific reserves of the L formation. Forty of the 41 coal seams of this series showed industrial reserves. On the basis of the previous standard (seam thickness in excess of 0.7 meters) new reserves were computed in the basin totaling 630 million tons of coking coal; as the result of the standards we developed, on the basis of the updatingof the old and the new price of coking coal and the great need of such coal, its international price, in terms of coke, equals that of petroleum. Our computations show that the minimum thickness of the seam could be reduced to 0.4 meters; hence, the computations based on thicknesses ranging from 0.4 to 0.7 meters proved that the reserves could be increased by yet another 280 million tons of coking coal. In other words, the overall reserves of the Dobrudzha Basin in the N and M formations, with the added reserves of the L formation, currently totals 2.1 billion tons, 910 million of which in the L formation possess coking qualities.

The adoption of a comprehensive approach to the assessment of the studies of the Dobrudzha Basin enabled us to determine that nearly all M seams had an overall average ash content (A_c) of 22 percent, had a high content of Al_2O_3, ranging from 30 to 37 percent. Preliminary estimates show that the reserves of dialuminum trioxide may total 15-20 million tons. We report this interesting fact, for in England the flushing of coal containing such a percentage of dialuminum trioxide for coking yields a highly effective industrial product from which the highest grade refractory materials are produced.

Another factor which makes us approach the assessment of the basin on a comprehensive basis is that the study of the waters conducted by a Soviet specialist determined that the carboniferous waters contain a high percentage of minerals, even though of a low flow, including a great deal of salt (over 100 mg per liter) and very high contents of other valuable components. The final assessment factor which must be included in the overall assessment of the basin, in our view, is the possibility to use the great flow of Valangian waters which are an excellent material for irrigation and even for human consumption.

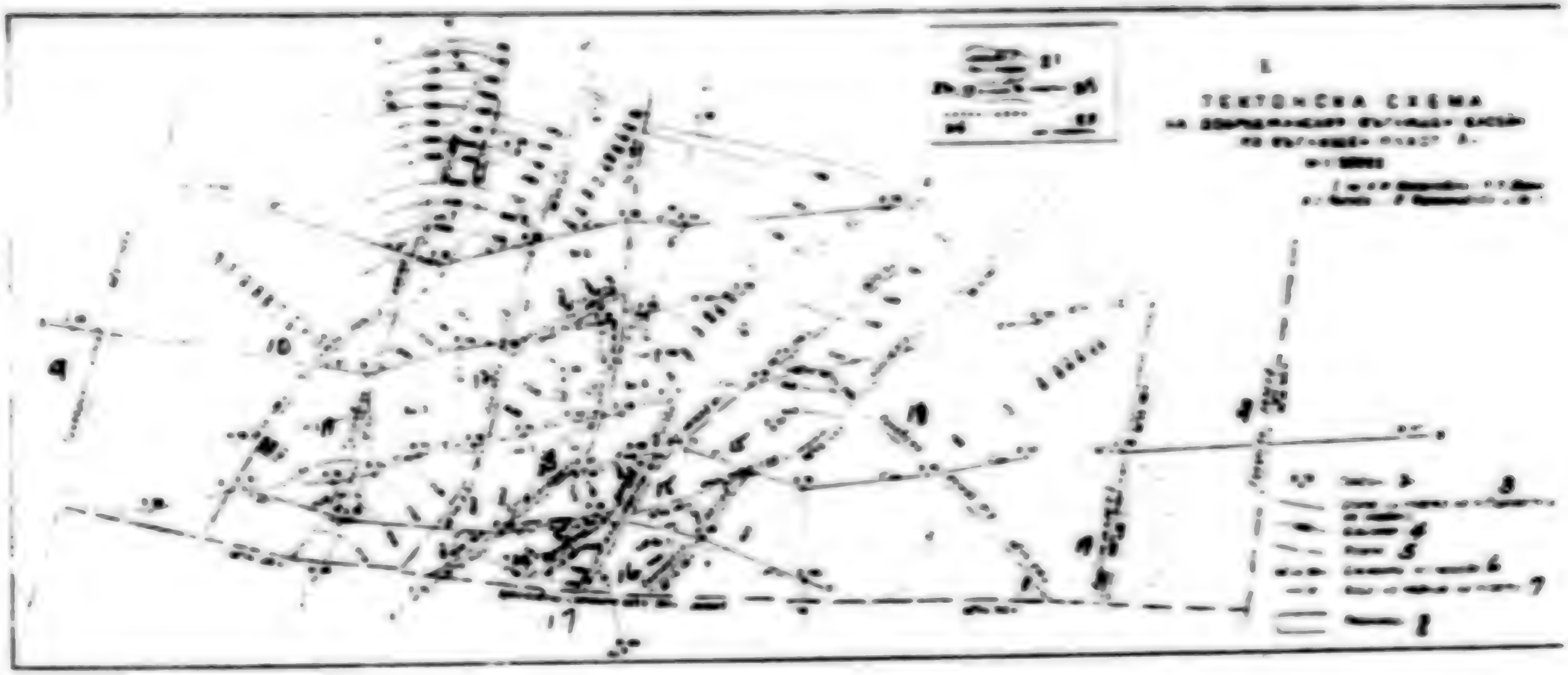
Presenting all these facts on the Dobrudzha Basin, regarding the development of the basin's reserves, let us mention that some of the areas may have reserves of several hundred million tons. Very great attention should be paid to this matter in subsequent studies of the basin even though, on our recommendation, the Committee for Geology has already begun the study of this matter. Hence the great tasks to be implemented in the further study of the basin related to the conversion of possible and forecast categories into industrial reserves, and, particularly, the complete clarification of all problems related to the determination of the hydrogeological and engineering-geological parameters required for planning purposes.

Let us point out in conclusion that the full determination of the industrial potential of this fuel raw material related to extractable coal calls for extensive additional geological surveys involving both the conversion of assessed coal reserves into industrial reserves and forecast results into assessed reserves and the discovery of new possible reserves. In this connection extensive scientific research must be conducted since an even more accurate foundation is needed for the geological surveying to be conducted by the geology institute of the Bulgarian Academy of Sciences and the Institute of Minerals of the Committee for Geology.

The overall studies must include as a particularly major problem the technology related to the study of the determination of the types of coking coal including those requiring layering. Let us add to such studies the need for further specification of the qualitative and quantitative indicators of the dialuminum trioxide not only in the M formation but in the N and L formations as well, as well as the extraction of the valuable components contained in the waters of the carboniferous formations.

For the time being, however, the major problem is that of selecting the places for drilling the shafts. Intensive work is being done in this area by the Committee for Geology and by Minproekt together with Soviet planning organizations.

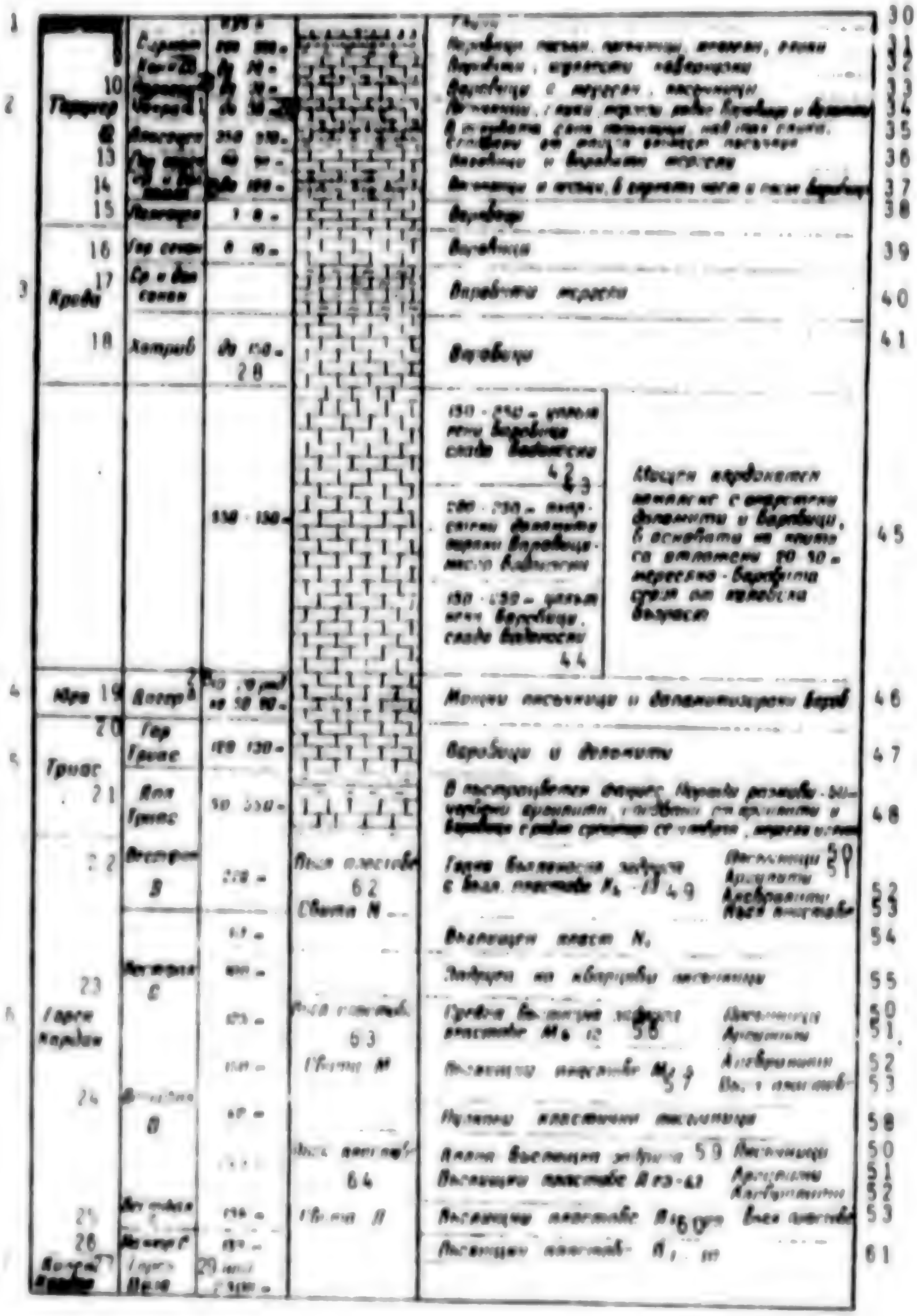
It would be desirable in the study, designing, construction, and development of the basin to use the latest technical and economic approaches, for this country does not have an abundant amount of coal even though following the discovery of the Dobrudzha Basin no other country in the Balkans has the type of coal discovered in our country.



Key:

1. Tectonic diagram of the Dobrudzha Coal Basin, L_1 coal seam; scale 1:50,000 (charted by N. M. Mozelevskiy, V. V. From, N. I. Peseda, V. Parashkevova, and others)
2. Drill
3. Seam outcrop on the surface of the carbonaceous
4. Isoline
5. Fault
6. Fault elements
7. Angle of inclination of the seam
8. Sandstones
9. Trigorski Fault
10. Tsarichinski Fault
11. Gurkovski Fault
12. (Lilyanski) Fault
13. Makedonski Fault
14. Velkovski Fault
15. Magelishtenski Fault
16. Selchenski Fault
17. Braslavsko-Selchenski Fault
18. Rakovski Fault No 2
19. Ralibski Fault
20. Gorunski Fault
21. Coal basin formation
22. Balchik
23. Kavarna
24. Black sea
25. Kalika Cape

Figure 1. Diagram of the Crosscut of the Dobrudzha Coal Basin



Key: 1. Quaternary
2. Tertiary
3. Cretaceous
4. Jurassic
4. Triassic
6. Upper carbonaceous
7. Lower carbonaceous
8. Sarmat
9. Kank
10. Karagan

[Key continued on following page]

Key to Figure 1, continued

11. Chakrak
12. Oligocene
13. Upper Eocene
14. Middle and lower Eocene
15. Paleocene
16. Upper Senonian
17. Middle and lower Senonian
18. Hatrib
19. Dogger
20. Upper Triassic
21. Lower Triassic
22. Westphalian D
23. Westphalian C
24. Westphalian B
25. Westphalian A
26. Namur C
27. Upper Visean
28. Up to 28a rare
29. Over
30. Clays
31. Limestones, sands, sandstones, marls, clays
32. Limestones, porous, cavernous
33. Limestones with marls and sandstones
34. Sandstones, clays, marls, rare limestones and dolomites
35. At the bottom clays, sandstones
36. Limestones and limestone marls
37. Sandstones and sands in the upper part and sandy limestones
38. Limestones
39. Limestones
40. Limestone marls
41. Limestones
42. Packed limestones low water-bearing
43. Karst dolomite limestones, highly water-bearing
44. Packed limestones low water-bearing
45. Thick carbonate complex with karst dolomites and limestones based on 20-50 meter marl-limestone series of (Calavian) age.
46. Thick sandstones and dolomitized limestones
47. Limestones and dolomites
48. Multicolored facies diffused 50 meters of red argillites, followed by argillites and limestones with infrequent allebrolites, marls, and clays.
49. Upper carboniferous formation with coal seams N_4-13
50. Sandstone
51. Argillites
52. Allebrolites
53. Coal seams
54. Coal seams N_1
55. Quartz sand formation
56. Little coal formation, seams M_{6-12}
57. Coal seams M_{1-5}
58. Volcanic-clastic sandstones
59. Lower coal formation coal seams L 23-41
60. coal seams L-22
61. Coal seams L_{1-10}
62. Coal seams formation N
63. Coal seams formation M
64. Coal seams formation L

In this connection, one of the most important problems related to the utilization of the reserves of the Dobrudzha basin is to determine the most economical solution involving the lowest possible losses of reserves of such valuable and scarce coal in our country.

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SEPTEMBER 1980 ECONOMIC RESULTS SUMMARIZED

Prague HOSPODARSKE NOVINY in Czech 31 Oct 80 p 2

[Article from the Federal Office of Statistics: "Report on Plan Fulfillment, September 1980"]

[Text] The results achieved in the development of the national economy in September were influenced by 2 more days of available worktime than in the same month last year. Most of the basic economic indicators recorded an accelerated rate of growth that month; in certain cases there were shortcomings in meeting planned goals.

There was increased dynamism in the sales of industrial production as compared with the same month last year with respect to deliveries of consumer goods as well as deliveries for export to socialist and nonsocialist countries. Enterprise plans in all aspects of sales were surpassed. Industrial production recorded a higher rate of growth in September compared with that of January to August, whereas average daily production fell in September by 2.6 percent compared with the same month last year. Production plans of enterprises were not totally fulfilled. In construction the objectives of the state plan in overall volume and structure of building production were not fulfilled; average daily production fell by 8 percent in September compared with the same month last year. There was low fulfillment of the plan in deliveries of housing units constructed. In agriculture the harvesting of sugar beets and potatoes was delayed compared with last year. In animal production the scheduled plan for procurement of all basic animal products was met. In domestic trade the dynamism of retail sales in the main trade systems accelerated in September. Retail sales of the Nabytek [furniture] trade organization were the only ones remaining below that of last September. In foreign trade the growth rate of imports was lower than that of exports.

In centrally planned industry, enterprise plans in all aspects of sales were surpassed by the end of September. Deliveries for export to nonsocialist countries recorded overfulfillment of the plan by 3.5 points in wholesale prices and by 4.9 points in deliveries for export to socialist countries. The number of enterprises which did not meet their enterprise plans in indicators of sales trends during the period January to September was lower than for January to August 1980. In comparison with the same period last year, from the beginning of the year to the end of September the volume of deliveries for export to nonsocialist countries at all charges paid prices increased most conspicuously (by 23.2 percent). A high rate of growth was also achieved in deliveries for export to socialist countries at all charges paid prices--110.9. With the exception of deliveries for domestic trade, the rate of growth achieved in the first 9 months in all sales trends was higher than that planned for the whole year.

In agriculture the harvesting of most of the remaining grain fields was completed and relatively good increases were attained in the crops of potatoes, sugar beets and silage corn. As of 13 October corn for silage was harvested from 94.8 percent of planned areas and potatoes from 77.6 percent of planned areas. Compared with last year, 21.6 percent of planned areas of sugar beets have been harvested. Preparation of the soil and the planting of winter crops are nearing completion. In procurement of basic animal products there was a marked increase in September of procurement of hogs for slaughter (10.7 percent or 8,000 tons more than September of last year). There was also a marked increase in the procurement of eggs over September of last year (11.8 percent) as well as fattened poultry (10.8 percent). Compared with last September the total procurement of slaughter animals including poultry was over 11,900 tons more this September, milk was 14.7 million liters more and there were 24.7 million more eggs.

In construction the low fulfillment of building production plans continued into September. The monthly schedule of building enterprise plans for construction work completed with internal resources showed an overall fulfillment of 98.8 percent. Low plan fulfillment was recorded particularly by the Silnice [highway] and Cestne Stavby [road construction] enterprises. The total volume of construction work completed with internal resources in September amounted to Kcs 7.7 billion, or 0.8 percent more than last September. However, average daily production in construction during September remained 8 percent below the level of last September. Likewise, the number of housing units delivered by contractors was lower than last September. Enterprise plans for building production were 99 percent completed in the period January to September. Almost 55 percent of building enterprises failed to meet their scheduled enterprise plans in this period. Compared with the same period last year the volume of construction work completed with internal resources increased 1.9 percent and reached over Kcs 61.7 billion. Thus 72.4 percent of the state plan for the year was completed by September. The year's planned rate of growth in construction was also lower during the 9 months in labor indicators: the number of workers and productivity of labor.

In capital construction the amount of work and deliveries completed, less Action Z [self-help] and individual efforts, (according to September estimates) came to over Kcs 92 billion in current prices during the 9 months and was 3.4 percent more than in the same period last year. From the beginning of the year until the end of September deliveries of machinery and equipment increased more rapidly (5.9 percent) than the volume of construction work (increment of 1.6 percent), even though the year's state plan assumed an opposite development in the structure of investment work and deliveries. Altogether 65.9 percent of the year's state plan for capital construction was completed by the end of September. Projects designated as mandatory tasks of the state plan achieved a higher proportion of completion with contractors' capacities concentrating on them.

In public freight transportation the September plan for transportation of goods was 99.8 percent fulfilled. The monthly railroad transportation plan was not met while CSAD [Czechoslovak Vehicular Transportation] and river shipping exceeded their planned transport objectives in September. A total of 55.1 million tons of goods was transported in September which is 3.7 percent more than last September. From the beginning of the year to the end of September public freight transportation handled 473.4 million tons of goods, or 3.3 million tons more than was planned for this period. Total railroad loadings for the 9 months increased by 1 percent compared with the January to September period last year, and average daily loadings in freight car units increased by 0.9 percent. The average turnaround time for freight car units was 4.21 days for the January to September period, whereas the planned time was 4.06 days. Compared with the same period last year the average freight car turnaround time increased by 0.5 days.

In domestic trade the main trade systems realized Kcs 18.1 billion (in current prices) in retail sales in September. In comparison with the same month last year retail sales increased in September by 6.0 percent. From January to September retail sales came to over Kcs 154.9 billion, which is Kcs 5.1 billion more than in the same period last year. The growth rate of retail sales in the first 3 quarters is 103.4; the year's state plan for all trade systems is 102.2. Enterprise plans of growth in retail sales in the CSSR were fulfilled 101.3 percent in the 9 months, in the CSR 101.5 percent and in the SSR 100.7 percent. Planned retail sales for January to September were not met by the trade organizations Nabytek [furniture] (96.8 percent) and Odevy [clothing] (98.8 percent).

In foreign trade the rate of growth in imports slowed down in September compared with the preceding period. From the beginning of the year to the end of September total exports increased faster than the year's planned growth, both according to the territorial structure and to imports from nonsocialist countries. Imports from socialist countries recorded a lower rate of growth in the 9 months than that projected in the year's state plan. Of the year's planned objectives 72.6 percent of total exports and 69.8 percent of total imports were fulfilled by the end of September.

Personal savings account deposits increased by Kcs 344 million from 15 August to 15 September. Total deposits came to Kcs 151.6 billion as of 15 September 1980, which was Kcs 4.5 billion more than the same time a year ago.

Basic Indicators of Development of National Economy in September 1980
Increments over Comparable 1979 Period (in percent)

	Sept	Jan-Sept	State Plan[1]
Deliveries of the centrally planned industry for:			
Investment at wholesale prices	-	- 0.2	- 5.3
Domestic trade at retail prices	-	3.8	3.6
Exports to socialist countries			
--at wholesale prices	-	7.3	3.0
--at all charges paid [franko] prices	-	10.9	7.2
Exports to nonsocialist countries			
--at wholesale prices	-	6.1	4.9
--at all charges paid [franko] prices	-	23.2	15.0
Other sales for manufacturing consumption and operations at wholesale prices	-	4.3	-

	Sept	Jan-Sept	State Plan[1]
Gross industrial production	6.7	3.6	3.5
Average number of employees	0.5	0.7	0.7
Labor productivity	6.2	2.9	2.8
Construction:			
Construction work completed with internal resources	0.8	1.9	4.5
Average number of workers	- 0.5	0.0	0.4
Labor productivity	1.3	1.8	- 4.1
Housing units delivered by contracting enterprises	- 2.5	- 2.3	6.1
Procurement:			
Slaughter animals (including poultry)	7.8	0.8	0.4
Milk	3.4	6.5	1.8
Eggs	11.8	6.1	3.2
Retail trade:			
of the main trade systems	6.0	3.4	2.2[3]
Foreign trade:[2]			
Exports to socialist countries	0.3	10.5	7.2
Exports to nonsocialist countries	11.2	24.1	17.5
Imports from socialist countries	-10.2	4.9	8.5
Imports from nonsocialist countries	- 7.9	17.0	8.2

	Aug	Jan-Aug	State Plan[1]
Accomplished investment work and deliveries (less action Z [self-help projects] and individual efforts	- 1.7	4.3	2.0
including: construction work	- 3.6	3.0	6.0
plant and equipment	1.3	6.0	- 2.9
National personal earnings[5]	2.7	4.8	5.4[4]
of which: income from wages[5]	2.6	3.4	4.1
Actual cash expenditures[5]	- 4.5	4.8	3.8[4]

FOOTNOTES

1. Increments compared to actual 1979 results with the exception of industrial work indicators.

2. Data on actual results refer to actual transactions and the state plan does not include unplanned actions in the framework of cooperation, unplanned reexport trade, exchanges and conditional trade transactions, etc.

3. All trade systems.

4. Including estimated interest added to loans.

5. Data calculated on the basis of the SBCS [Czechoslovak State Bank] treasury plan.

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CSSR OFFICIAL SEES URANIUM AS PRIME ENERGY SOURCE

Prague HOSPODARSKE NOVINY in Czech 31 Oct 80 p 6

[Discussion with Engr Milan Povolny, director of the Fuels and Energy Department of the CPCZ Central Committee, Engr Vladislav Novy, general director of the Czechoslovak Uranium Industry: "The Energy Future Is Called Uranium".]

[Text] There are many significant uranium deposits in CSSR territory. This uranium is of various genetic types and industrial importance and constitutes the basis of our nuclear program. This program requires a domestic raw material base capable of covering present and future needs. We discussed current progress in this area with Engr Milan Povolny, director of the Fuels and Energy Department of the CPCZ Central Committee and Engr Vladislav Novy, general director of the Czechoslovak Uranium Industry.

[Question] How would you characterize the current position of the Czechoslovak Uranium Industry?

[Povolny] Our mining industry has a long tradition, but the extraction and utilization of uranium has a much shorter history. The Czechoslovak Uranium Industry, which this year is marking the 35th year of its existence, represents an essential component of the Czechoslovak mining industry. One may briefly describe the basic fields of its activity as prospecting for and analysis of deposits of radioactive raw materials, and extraction and processing of uranium ores. In addition, it contributes to the national economy in other areas as well, for instance with the results of its technical development efforts or with its construction and assembly capacity. The development of the Czechoslovak Uranium Industry, achieved with the effective assistance of Soviet experts, and a number of the outstanding results of its efforts, both attest to the high degree of initiative of its collective.

[Novy] The history of our uranium industry begins in Jachymov, where uranium ore has been mined on a modest scale since the end of the 19th century. It was used for the production of pigments and glazes in the glass and ceramic industries, and later also as a source of radium for medicinal purposes. As we all know, uranium became an important military-strategic raw material in the course of World War II, but at the same time a way opened for uranium truly to serve mankind. The peaceful use of uranium as the principal source of atomic energy may be tied symbolically to the start up of the first Soviet atomic power plant in Obninsk in 1954. Since that date uranium has also been a fuel for atomic power plants and I hope that in the near future it will become a fuel for atomic heating plants.

The development of the Czechoslovak Uranium Industry is closely tied to the evolution of our domestic situation and international relations since World War II. As early as 1945 the Jachymov Mines national enterprise had begun at Jachymov, from which there gradually evolved the contemporary concern, Czechoslovak Uranium Industry, with its base at Pribram. Thanks to the significant professional and material assistance of the USSR, and as a result of committed work by the people, the mining and processing of uranium ores was successfully developed at a tempo which has no parallel in our geological prospecting and mining industry. Today the Czechoslovak Uranium Industry represents a comprehensively equipped economic production unit capable of systematically and purposefully concentrating its talents and resources on the fulfillment of planned objectives. At the same time we consider it natural to present the results of our work and our collective ability to assure even additional tasks directly connected to uranium related activities.

[Povolny] I can confirm this. Our uranium miners, who are known for their exceptional performance--even for a world record in the driving of horizontal shafts--helped us to cut a potable water conduit from Zelivka to Prague: that 52-kilometer tunnel required sophisticated technological execution and is a masterpiece of the tunneler's art. They built for us the high quality basic sewer main K in Prague which has helped in the removal of sewage, and waste water generally, from important locations in Prague. And of course we are counting on their future assistance in the construction of underground tunnels for energy or water management purposes in Dalesice, Dlouhe Strane, Josefuv Dole, and elsewhere. I could also name a number of projects at which the builders and assemblers from the uranium industry have been employed successfully.

[Question] Does that mean that our uranium industry is not concerned only with the prospecting for, extraction, and processing of ore?

[Povolny] I mentioned miners and construction with respect. In connection with the development of the uranium industry it is also possible to evaluate the work of its research and development base which appeared, for practical purposes, 20 years ago, and which is today already a respected institute. In addition to the mechanization of basic mining and processing activity, there has been developed here, for instance, an automated system which has been employed very satisfactorily at the operational management level of all new electric power plant units. We are counting on a later model of this unit for the automation of the conveyor belt transportation systems in the North Bohemian lignite region and in other locations. Close cooperation with agencies responsible for energy will indicate the possibilities which are offered within our uranium industry and in the utilization of the results of its work for our national economy.

[Novy] In automation technology we are cooperating closely with the Skoda works, to which we deliver our DIAMO system for exported turn-key projects. I wish to point out, as an example of automation technology, our approach to the resolution of our own needs and those of society. From the beginning we have been covering out automation needs, i.e. automation in the mines and processing plants. A group of "fired up" people was able to come up with a unit which exceeded the original specifications at its introduction. Because we are trying to outfit our development base and our implementational capacity, we have succeeded in significantly shortening that well known, and so frequently rightly criticized, cycle of development-production-utilization. This applies, though, for other products or contracts let as well. Again, I will mention just as examples, drilling cars and other mechanized technology for miners, processing technology, vibration technology, the equipment and technology for gunite; all of these are being used successfully not only by us, but in other fields as well. Because we develop and produce our own radiometric measuring and controlling instruments, our experts have been able to advance as far as the design and production of flaw detecting and medical betatrons. You will find mobile modules, which we first developed and produced for our geologist prospectors, today not only at various locations in the republic, but also in many other countries.

We are placing great emphasis on the close connection of operation, design, and development. If our tunneling crews achieve a peak labor productivity of about 1.5 meters per worker per shift in crosscut tunneling--as, for example, the Mladeznicka brigade of Josef Holaza did recently at the uranium mines in Pribram--then this attests without doubt to the quality of mechanization and the competence of the workers.

[Question] There is, then, very extensive activity apart from uranium. Does this not mean that there is no longer anything to do in the area of uranium?

[Novy] Definitely not. We always accord first priority to the fulfillment of our mission which is given by our very name. We have prospected our republic in relative detail, but we still cannot rule out new discoveries of uranium deposits which do not extend to the surface, or of other types than those we have mined thus far.

We have significant uranium deposits, some of which are peaking in extraction potential, while we are only just acquiring others. We must constantly improve our processing technology. At certain deposits we have reached significant depths, more than 1,700 meters, and this demands that we solve a number of complex problems connected with the ventilation and climatization of the mines. Our uranium mines, together with our own National Health Institute have always responsibly and progressively approached the solution of the hygienic and safety issues related to the mining of radioactive raw materials, and I can say without exaggeration that we are first in the world in this area.

If we want to maintain and improve these good results in the mining and processing of uranium ores we must create the corresponding technical and material base. And if something which we have developed and produced is applicable in another branch as well, then it would be a shame if we were to refuse to deliver it to other interested parties Our capacity is limited, however, and it bothers us that we cannot satisfy a number of requests. The needs of our miners, however, will always be uppermost in our minds, and because the Czechoslovak machine tool industry produces almost no specialized machinery and equipment for them, we are forced to rely on our own sector's efforts and on imports. Therefore we are preparing to strengthen our machine tool base for the production of the specialized machinery needed for ore and uranium mining. We cannot, however, produce everything ourselves, nor must we justify this. Unfortunately, however, deliveries from our machine tool enterprises are obtainable only with great difficulty and often are not of the necessary quality. The rapid tempo of development of the uranium industry and the acquisition of new deposits characteristic of this industry have taught us to give priority to the introduction of modern technology and new forms of work. This places high demands, however, on technical and material support. We particularly need to improve cooperative and consumer-producer relationships with machine tool organizations, as well as the innovation and modernization of certain components and construction elements. Our technicians are able to design good machines and technical procedures, and our workers achieve exceptional performance with them: our responsibility is not only to direct them this way and motivate them properly, but also to assist in the creation of a corresponding organizational and material base. As we have endeavored to show, at the same time we are not closing ourselves off, but helping the national economy where we can and where we have the ability - in the drilling of underground engineering tunnels, in the transferral of knowledge, and with certain products.

[Question] How is our uranium industry helping to solve the current fuel and energy balance?

[Answer] [Povolny] The answer is connected with our directive to shift to atomic power plants in the solution to our fuel and energy balance: in the Seventh Five-Year Plan they will cover more than 40 percent of the increased production, and in later years the fuel and energy balance is expected to be resolved exclusively with the help of atomic power plants. The operation of a single block of the V1 atomic power plant saves us almost 300,000 tons of coal a month. If we have saved more than 4 million tons of coal from the beginning of operation of this power plant, that is the operation of the first and second blocks, to the end of July of this year, then this is not only a significant success, but also proof of the correctness of this path.

Our nuclear program has just begun to develop. We are planning to build, prior to 1985, nuclear power plants with roughly 3,500 megawatts of capacity, and before 1990 we will achieve an installed capacity of more than 7,000 megawatts. We have a sufficient raw materials base. On this base is an established uranium industry, which we do not doubt is capable of supplying the nuclear program with uranium. But we are also of the opinion that we can count on its assistance in selected sectors of the technical development of nuclear energy.

It is clear that we could not implement as extensive a nuclear program as we have planned without the decisive assistance of the Soviet Union. At present this assistance is in the construction of a nuclear energy capacity based on type VVER 440 thermal reactors and later the VVER 1000, but in the 1990's we are already planning for close cooperation in the preparation for a shift to so-called fast reactors. This means that despite its abundance we must rationally manage our uranium, and in fast reactors we can gain as much energy from one ton of uranium as from 3 million tons of crude oil.

Our uranium industry has its own irreplaceable mission in the nuclear program, and the remarks of the general director, Engr Novy, that the assistance rendered to the uranium industry by our machine tool industry needs to be improved, are completely justified. The uranium industry collective often helps itself, but in a developed social division of labor this is unacceptable: certainly we cannot produce ourselves those products which are the concern of specialized factories--hydraulic units, electronic components, and the like. We must emphasize that the implementation of our intentions in nuclear energy confronts us with a number of very demanding requirements, problems, and tasks, and they must become a matter for our whole society. The comrades from energy agencies and the uranium industry will certainly not end up owing us anything.

[Novy] We are aware of this and want to help, in areas which are our responsibility as well as where we can and are able, that is in uranium-related and enriched extra-uranium activities about which we spoke.

[Question] You mentioned safety and hygiene in the uranium mines. This is a very real subject in our conversation, along with the safety of atomic power plants and preservation of the environment.

[Povolny] Unfortunately, mankind knows of the huge amount of energy liberated from the atomic nucleus in its worst form--in atomic bombs. This has naturally left justified fears regarding the use of radioactivity. However, on the other hand, these fears have called forth, as their positive consequences, the conduct of extensive research work, the introduction of systems of inspection procedures and safety measures in atomic energy so that we have today, in many ways, a more profound knowledge about the effects of radioactive materials than we have regarding the effects of the discharges from tradional coal-fired power plants. Of course it is still necessary to resolve certain problems, for instance the processing and storage of wastes from atomic power plants. Even today, however, it is possible to prove that the nuclear program will play a positive and progressive role in the preservation of the environment.

[Novy] I have already mentioned the ventilation and climatization of our very deep mines, which is a complex and demanding task not only technologically, but also in terms of the economics of mining. If I am to attempt to summarize the crucial tasks in the caring for workers in the uranium mines and processing plants, then, with the danger of oversimplification, I would mention three main areas. I would place primary emphasis on attention to the working conditions, to the environment of mining work. This includes not only ventilation, but also the development of mechanization which we have already talked about, and technical procedures, the replacement of the physical toil so typical of mining in the past. The second trend also involves the work process, and is the system of hygienic and dosimetric inspection techniques. Today we have not only the overall work environment of the mining and processing plant areas, but also every individual, under dosimetric control. Finally I must mention the health and social services for our workers, which correspond to the difficulty of their work. Mining is basically a pillaging activity, so our first step into the natural environment is--to put it plainly--disruptive. We are trying to limit these influences as much as possible and "clean up" after ourselves. We reclaim dumps and work spaces. A system of environmental preservation measures for our North Bohemian deposit is being devised even in a state research project with the help of other professional institutes.

Attention to the workers of the uranium industry and the preservation of the environment has been the subject of the discussions of the highest party and state agencies several times. It could be said that this has been given as a foundation of our socialist system. We see in this, however, also an evaluation of the significance of our work and this is, for us, a great commitment. We have the raw materials base, the developed material technical potential, and primarily the people, who know the tasks facing them, who know the need for uranium, and who are determined to contribute to our economy not only in uranium, but by their work as a whole.

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GERMAN DEMOCRATIC REPUBLIC

ENERGY SEMINAR URGES GREATER CONSERVATION MEASURES

East Berlin PRESSE-INFORMATIONEN in German No 124, 21 Oct 80 pp 1-14

[Excerpts from special edition, published by Press Office, Chairman, GDR Council of Ministers, on the council's Seventh Seminar on Efficient Use of Energy, held in Halle, 15 October 1980: "Experiences and Tasks in Efficient Use of Energy"]

[Excerpts] Efficient Use of Energy--Essential Element of Our Energy Policy: From the Concluding Speech by Wolfgang Rauchfuss, deputy chairman, GDR Council of Ministers; Director, Central Energy Commission

We can today note with satisfaction that our seminar made an important contribution to the preparations for the Tenth Congress of the SED. We base our statements on the fact that the analysis of the 11th and 12th conferences of the SED Central Committee in the combines, enterprises, and installations are providing strong impetus for the initiatives and activities aimed at a steady energy supply and greater material and energy savings and that the comprehensive competition in honor of the Tenth SED Congress in this field likewise produced significant results.

In his fundamental speech to the Gera party aktiv, Erich Honecker, secretary-general, SED Central Committee, particularly stressed the significance of expanding our own raw material base and consistently oriented us toward making increasing use of raw brown coal and using petroleum for the materials economy. Our discussion today proved that this demand encountered fertile ground.

Today we drafted the conclusions as to how we must proceed with a high level of action readiness, creative force, and a new pace in the economical and efficient utilization of energy as the most important factor in our proven socialist energy policy. It is precisely the rational and economical utilization of all energy sources and the increased supply and utilization of our domestic raw brown coal which constitute the firm foundations on which we will guarantee a steady energy supply for the population and the economy. This is our contribution which we will make by way of preparations for the Tenth SED Congress through our responsible work.

Being Self-Reliant

To solve the critical energy-economy and material-economy problems, our country's workers are orienting their thinking toward their own actions. This is an eloquent expression of their strong confidence in the proven policy of the party of the working class for the welfare of the people and their conviction that their vital interest are protected under that leadership.

The situation arising from the international energy and raw material development hit the GDR particularly hard because it is particular dependent on raw material and energy imports. What can we throw into the scales in order not only to master this situation but in order at all times to assure the national economic growth of our republic?

Here we have the even closer tie-in between the advantages of our socialist social system and the scientific-technological revolution;

Next we have the political organizational status and consciousness of our working class;

We have its close relationship of confidence with our party and we have the high educational level of our workers;

We have the fact that, today, thanks to the wise education policy of our party, we have more than 1.4 million cadres with college and technical school training and their number has almost doubled since the Eighth SED Party Congress.

It is of basic significance for the further successful advance on the road of the Ninth SED Party Congress that we achieve a high growth rate of production with a considerable smaller increase in energy and raw materials and fuels that are important to the national economy through a higher degree of refinement, utmost economizing, and utilization of all secondary energy, material, and raw material resources. Everybody must keep the correct yardstick in mind here. A fast production growth rate during the coming years is what we are going to have to guarantee to the extent of 90 percent through the better utilization of our raw materials, energy sources, and materials.

The reduction rates achieved so far in the specific consumption of energy, raw materials and material from an annual figure of about 3 percent must be raised to more than 5 percent. The main raw materials will during the coming years reveal a growth rate that is below one percent. In spite of increasingly complicated conditions, deliveries of raw materials from the USSR will be kept on the same level as in 1980.

Efficient and Economical Energy Utilization--Important Concerns

In our further work to secure the energy supply, we must start with the assumption that the most rational and most economical energy utilization and the elimination of any kind of energy waste are in first place throughout the country. Today, tomorrow, and in long-range terms, this is a fighting asignment for everybody. This is what we must convincingly explain to every worker, every citizen of our country, as the first prerequisite for the successful accomplishment of the energy supply during the next winter and during the coming years because everything we want to achieve calls for individual and independent thinking.

Efficient and economical handling of energy therefore is in first place because the expansion of our energy Base--which we will continue to advance in the future likewise with a great effort and by using a large volume of national economy assets--is connected with growing expenditures.

Efficient and economical handling of energy is in first place because it is a question of just plain economical common sense since our discoveries tell us that the full utilization of all possibilities in this field--and the seminar brought out the magnitude of these reserves--ties up only half and in some cases even less national economic assets than would be necessary for additional expansions of the energy base.

Efficient and economical handling of energy is in first place because it is a question of respect for the work of others, for example, our miners and energy workers; because that which was created through hard work under difficult conditions must be used as carefully as possible. This is why we are guided by the idea of further stressing the careful handling of energy as an important feature of socialist attitudes toward work, as well as quickly utilizing all suggestions and ideas for economical energy use.

All managers bear a heavy responsibility for verbatim excuting the resolutions of our party and government regarding economical energy use, dating back to September of last year, and the winter directive issued by the party leadership and the government in May 1980, in the enterprises, in their LPG [agricultural producer cooperatives], their department stores--wherever energy is used--and to urge every worker, engineer, and scientist to be creative in their activities.

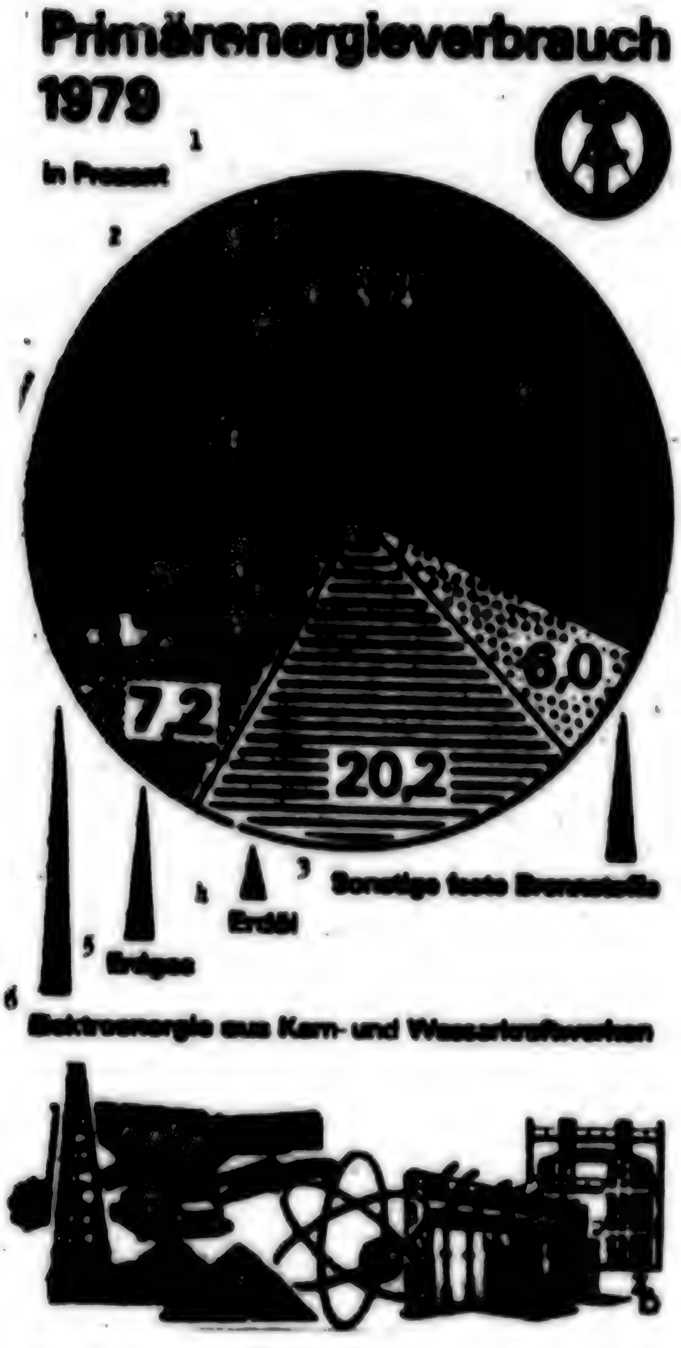
Exemplary Initiatives

This is what the workers of the VEB Carl Zeiss JENA Combine are doing, along with those of the VEB dkk Scharfenstein, the VEB Beierfeld Measurement Instruments Plant, the VEB Berlin Photochemical Works, and many others. Their activity is characterized by the fact that they implement the resolutions concerning energy savings and the replacement of heating oil and hard coal in their enterprise with a high degree of consistency.

In the VEB Carl Zeiss JENA Combine--which was the first combine in the republic to be recognized as a combine that works in an exemplary manner regarding energy management--all of the 13 combine enterprises have already been honored with that title. In 1980, careful measures resulted in a reduction of the heating oil utilization by one-third, amounting to about 650 tons. The use of hard coal was replaced to the extent of 100 percent through complete conversion to raw brown-screened coal in a mixture with brown coal briquettes and many combine enterprises are effectively implementing scientific-technological measures, with rising savings, moreover. In this combine, the emphasis is on the use of energy yield and the reduction of the heating and air conditioning expenditure.

One likewise however must not overlook the fact that not all enterprises are, as yet tackling the implementation of the resolutions of the party leadership and the government with the same goal-oriented attitude. The VEP Lithopone Fuerstenwalde, for example, just about promotes energy waste through insufficient management activity. For example, the workers assigned to the boiler plants and to energy-intensive drying plants are not given an incentive in the competition for economical energy utilization on the basis of technically-economically justified standards. The activities of the heating sector officer likewise were carried out very deficiently in this enterprise. This causes heavy losses during heat transfer and at the customer's end.

In our work we can start with the assumption that we have not only a high degree of consciousness and education among our working class and intelligentsia but also a well-developed management and planning establishment for energy-industry tasks, as well as a developed set of instruments for the planning and accounting of energy, which becomes considerably more effective through the resolutions aimed at the introduction of government quotas, their monthly accounting along with increased responsibility on the part of the general managers; this is also in keeping with the rising requirements for a high degree of flexibility.



1979 Primary Energy Consumption
Key: 1--Percent; 2--Raw brown coal; 3--Miscellaneous solid fuels; 4--Petroleum; 5--Natural gas; 6--Electric energy from nuclear and hydroelectric power plants.

Clear Concepts

The resolutions of the SED Central Committee Political Bureau and the Council of Ministers of September of this year regarding the comprehensive implementation of efficient energy utilization in 1981-1985 are of basic significance. The important thing now is to make sure that the ministers and general managers will draft their own concepts for the implementation of efficient energy utilization, starting with a thorough analysis of their sphere of responsibility, and that they will make that a part of their plan.

The most important thing here is to bring about agreement among goals in the fields of science and technology, rationalization and investments with the existing energy source quotas both in terms of the sum total of energy consumption and regarding the specific energy source. Only those concepts are useful to use in which the energy rationalization targets agree with the energy sources contained on our balance sheets. That starts in 1981.

Here we must prove that the assignment given by SED Central Committee Secretary-General Erich Honecker--once again formulated in the address to the Gera party aktiv--was correctly understood everywhere. So, let us fight for the utilization of the energy yield, let us fight for a reduction in energy consumption and for higher production targets with less energy--that is what this is all about.

The conference proved that we have made good headway since the sixth seminar in increasing the effectiveness of energy utilization in the national economy. At the same time we were able to see that we have the strength to attain the high goals for the years 1981-1985. The important thing now is to throw this ability into the scales by way of preparation of the SED's Tenth Party Congress and that we always start with the assumption that questions of energy and material savings are vital issues in our national economy.

Nobody must expect the situation in this field to become simpler and nobody must expect anybody to relieve him of his responsibility. Efficient energy utilization remains the very nucleus of our energy policy and a main factor in increasing the effectiveness of the national economy.

Ensure Economical and Efficient Use of Energy: From Speech by State Secretary Heinz Ziergiebel, Chief, Working Group on Efficient Energy Use, GDR Council of Ministers

[Text] At the 11th Conference of the SED Central Committee at the end of 1979 SED Central Committee Secretary-General Erich Honecker already observed that a new situation has arisen for the GDR which above all will have profound consequences regarding the output, importing, and utilization of all energy sources. This situation estimate was confirmed throughout 1980. The situation on the international energy source market has become more critical above all because the external conditions for raw material procurement and especially for energy sources such as petroleum, hard coal, and coke, which we must import most of all, have been drastically aggravated.

The party leadership and the government have adopted fundamental resolutions in order--through the most economical and efficient possible utilization of fuels and energy, primarily involving imported energy sources, and through the elimination of any waste--to create the most essential conditions for a steady energy supply in the GDR. This is the very core of our continuing energy policy; that is what the secure energy supply depends on primarily in connection with the continuation of the successful economic and social policy of the Ninth Party Congress during the coming winter and the next several years.

As Erich Honecker noted in his fundamental speech to the Gera party aktiv conference, the important thing is to achieve the required increase in performance, the supply of more and better final products for the supply of the population, for the national economy, and for exports with a quantity of energy sources and primary raw materials "which will remain the same or which will increase only slightly. Successfully accomplishing this task is a vital issue in the truest sense of the word for the DGR national economy."

Visible Results and High Demands

A high rate of national economic growth was achieved for the first time in the GDR in 1980 without a rising energy utilization. Combines, such as, VEB LEUNA-WERKE "Walter Ulbricht," Carl Zeiss JENA, the "Wilhelm Pieck" Schwarza Chemical Fiber Combine, Shipbuilding, GISAG, Cotton, or the "7 October" Machine-Tool Combine, the Photochemical Combine and others in 1980 are guaranteeing considerable output increases with less or the same energy than during the preceding year. Today they are already tapping those reserves through the elimination of any kind of energy waste and consistent socialist rationalization with their own resources, as is in keeping with the requirements for the eighties.

Since the Eighth Party Congress, the primary energy expenditure per unit of industrial growth output has been reduced by 25 percent. The benefits deriving from energy rationalization in our enterprises over the past 9 years amounts to about 90 million tons in terms of raw brown coal. The directive of the SED Central Committee Political Bureau and Council of Ministers concerning the comprehensive implementation of efficient energy utilization during the 1981-1985 five-year plan now starts with the idea of saving more than twice the energy than during this five-year plan through rationalization, in the year 1985 as compared to 1980, or the scale of the national economy as a whole.

These targets are above all a challenge to science and technology. Accelerated rationalization of the production processes and the development of new energy-saving technologies and products with top-grade international values are decisive prerequisites in order to guarantee dynamic economic growth with a small energy increase in the long run. The most economical and the most rational utilization of energy is a national economic effectiveness factor of the first order. It demands considerable expenditures which however are at least by one half lower and in many cases even lower than that, than would be required for the expansion of our energy base and for the procurement of energy from imports--something for which we continue to require signficant national economic assets, at any rate, more than has been used for this purpose so far.

Use More Raw Brown Coal

The drastic change in the conditions connected with the import of energy sources compellingly demands a fast increase in the output of raw brown coal and its maximum utilization in the economy and in the social sector.

Heating oil must be released as fuel to a hitherto unknown degree because the stepped-up materials-economy utilization of petroleum and imported natural gas represents a decisive foundation for the raw material supply of the GDR national economy during the coming year. We start with the assumption that raw brown coal--in spite of increasingly unfavorable conditions regarding its extraction--is and remains by far the most effective energy source for the GDR in terms of its national economy. Looking at present-day prices alone, we can see that the social expenditure for one heating unit based on natural gas is four times greater and in the case of heating oil even eight times greater than in the case of raw brown coal. The increasing difficulties, which are undoubtedly connected with the use of raw brown coal, must be mastered in terms of the national economy and that is proved by the practical results; but the consequences arising otherwise from growing import burdens cannot be brought under control.

The initiatives triggered as a result of the resolutions of the party and government concerning the economical and efficient utilization of energy of September 1979 and the directive on fuel and energy supply during the coming winter semesters as well as the introduction of government quotas for energy supply enabled us during the last year to make most effective progress in our energy savings effort. Careful handling of electrical energy and heat, elimination of overheating and unnecessary illumination resulted in savings of 6-8 percent for electric energy and heat. That helped us save considerable quantities of heating oil, hard coal, and brown coal briquettes.

It is particularly important here to make sure that we achieve the output increase in industrial commodity production, almost without any increase in energy utilization, by the end of September. The specific electric energy consumption for industrial commodity production dropped by 6.2 percent compared to the preceding year. For the first time, likewise, we noted a considerable decline in energy consumption during that year in the communal sector; that is an expression of successful work, above all by the councils of the bezirks and the kreises and their energy committees which are increasingly developing into effective agencies working on the implementation of our socialist energy policy.

Compliance With Government Quotas

Although we can be satisfied with what we have achieved, we must not overlook the fact that--judging by the new requirements--initial steps were taken although much remains yet to be done. The past months tell us that the consistent implementation of resolutions concerning work with government quotas holds a key position. Government energy consumption quotas constitute minimum requirements regarding the efficient utilization of energy but at the same time are the maximum permissible limit for energy consumption. They call for high quality in energy consumption norms. Government quota, energy supply contract, and cost planning must form a unit here. If the government quotas are exceeded, then government penalties will be collected for any additional consumption in the amount of ten times the price. The responsibility of the general managers of the combines for this task was considerably increased. We can say today with certainty that this resolution proved itself fully.

Our past work however also shows that much remains to be done in order everywhere to implement the required high level in connection with planning and accounting the energy consumption as well as regarding order and discipline in handling energy. At the end of August, there were still ten combines that exceeded the planned energy consumption figures.

Presently, about 80 percent of the energy utilization in conversion plants in industry and barely 50 percent of the energy consumption in practical application plants are being investigated by means of processed analyses. Nevertheless, their results have not yet been adequately transposed into technically-economically justified energy consumption norms and rationalization measures. Thus, the energy consumption in the combines of the ministries of ore mining, metallurgy and potash, of the chemical industry, as well as of coal and energy, are being planned to the extent of more than two-thirds with technically-economically justified norms while that share in the combines of the ministries of the metal-working industry, of electrotechnology and electronics, of the glass and ceramics industry, as well as the light industry comes to less than 30 percent.

Record Achievements in Science and Technology Indispensable

In order to develop the rational use of energy into the decisive factor of our energy policy in the long run, we must today absolutely have record achievements in research and development so that we may--in the planning and design of products, systems, methods, and building structures--quickly attain scientific-technical top-level standards in energy consumption, in the weight-output ratio, in the waste statistics, and in other important quality characteristics.

The drafting of 550 energy consumption norms, which are contained in 43 GDR standards, helped us in a series of products to achieve international top values for energy consumption. That involves the development of a new generation of induction heat systems at the VEB Locomotive Construction Combine, the "Hans Beimler" Electrotechnical Works at Hennigsdorf, where the specific electric energy consumption was reduced by one-fifth particularly through the use of static frequencies changers and where they managed to catch up with scientific-technical top-level standards.

The analysis of the valid energy consumption norms however also reveals that, in the case of several standards, the energy consumption achieved is partly as much as 50 percent below the value of the confirmed standards so that this particular standard no longer has any stimulating effect.

Research and development must make the decisive contribution to the most efficient development of technological processes in our economy and the development of new results and methods with international top-level figures in energy consumption in order to attain and help determine top-level positions in the main directions of energy conversion and application. This is the critical point when it comes to asserting the most efficient utilization of energy, during the coming five-year plan and far beyond that, as the main pillar of the country's energy policy.

In order to manage and control the efficient utilization of energy more effectively with the help of the plan, the most important measures in the field of science and technology, of socialist rationalization as well as investments will. starting in 1981, be spelled out along with the state plan and central planning will be organized by combines. With the confirmation of the energy plan and the plan of rational energy utilization measures as a part of the enterprise plan by the general managers and plant managers starting in 1981, the possibilities of influencing the implementation of efficient energy utilization through the plan will be considerably increased.

Many combines are aiming at the correct goals. The VEB Carl Zeiss JENA Combine, in agreement with the high pledges spelled out in the letter to SED Central Committee Secretary-General Erich Honecker, guarantee an increase in 1981 industrial commodity output to a figure of 111.3 percent coupled with a decline of energy consumption down to 98.8 percent. The Wilhelm Pieck VEB Chemical Fiber Combine in Schwarza is topping the predetermined target for energy rationalization for example by energentically continuing the successfully begun utilization of energy yields which so far has resulted in an annual energy cost reduction; with the help of the 1981 plan, they want to reduce the energy requirement to 96.2 percent as compared to 1980. On the other hand, there are still combines and enterprises which do not meet the predetermined rationalization targets.

Better Utilization of Manifold Reserves

Critical points consist of the processes of energy conversion and technological heat and drying processes, including energy yield utilization. Here we can earn two-thirds of the savings potential, based on our calculations for the next several years, with a particularly favorable ratio between expenditure and benefits.

A group of experts have discovered that improved plant organization and waste heat utilization as well as the employment of modern burners, furnaces, and fire-proof material, in about 21,000 industrial furnaces, above all in metallurgy and chemistry, in the metal-working industry, the construction materials industry, and the glass and ceramics industry, will make it possible to tap reserves corresponding to a raw brown coal equivalent of 28 million tons, including 7 million tons alone through better plant management and utilization of available BMSR [industrial measuring, control, and regulating technology] equipment. In these high-temperature processes, we use above all heating oil, gas, coke, brown coal briquettes, and electrical energy. The average rationalization expenditure amounts to only one-sixth of the funds otherwise needed for energy source procurement. And we must add that heat treatment in such furnaces, in keeping with quality requirements, decisively influences the quality of GDR products.

The are great possibilities for waste heat utilization, above all waste gas heat, in the temperature range between 400 and 1,200° C. Only a part of the fuel-burning industrial furnaces is equipped with air preheaters. Possible air preheating of up to 600° C reduces the energy requirements by 30 percent.

The consistent utilization of energy yields as the safest energy source, because it is present in each plant itself, above all calls for corresponding preparations in the combines and enterprises. The study however shows that there are still backlogs in the preparation and utilization of the energy yields at the plants.

Energy Savings During Construction Work

Energy-saving construction activities, efficient handling of energy in room heating--these are of great importance to the energy economy of the GDR. In the meantime, energy utilization for space heating has risen to more than 36 percent of the utility energy consumption. The Seventh Construction Conference of the SED Central Committee and the Council of Ministers directed the workers in the construction industry quickly to create a scientific head start in order to reduce the energy expenditure for new buildings and structures to be modernized by at least one-third by the year 1985.

The improvement in the quality of work in the board factories--as demanded in the winter directive--takes first place when it comes to saving energy in construction work. But here we often have energy losses of up to 20 percent per construction project. This is an extraordinary loss to the national economy if we keep in mind that buildings which contain quality shortcomings will unnecessarily burden our energy inventory for many decades to come. Subsquent repair work is expensive, in most cases it is not possible, and it does not produce the same anticipated effects as the proper kind of construction work would, if it were done correctly from the beginning.

Good lessons have been learned in the Schwerin and Karl-Marx-Stadt housing construction combines with respect to quality control and the implementation of government heat consumption norms. In Schwerin, the bezirk energy committee, the energy combine and the housing construction combine--through the rational development of the WBS-70 [Housing Construction Standard?] type--since 1976 reduced the heat requirement per apartment unit by one quarter and thus stayed within the norm. Quality control, better heat insulation along gable walls as well as in the ground floor and the gable ceiling and more effective regulator equipment were important factors here. But not everybody is working in this way.

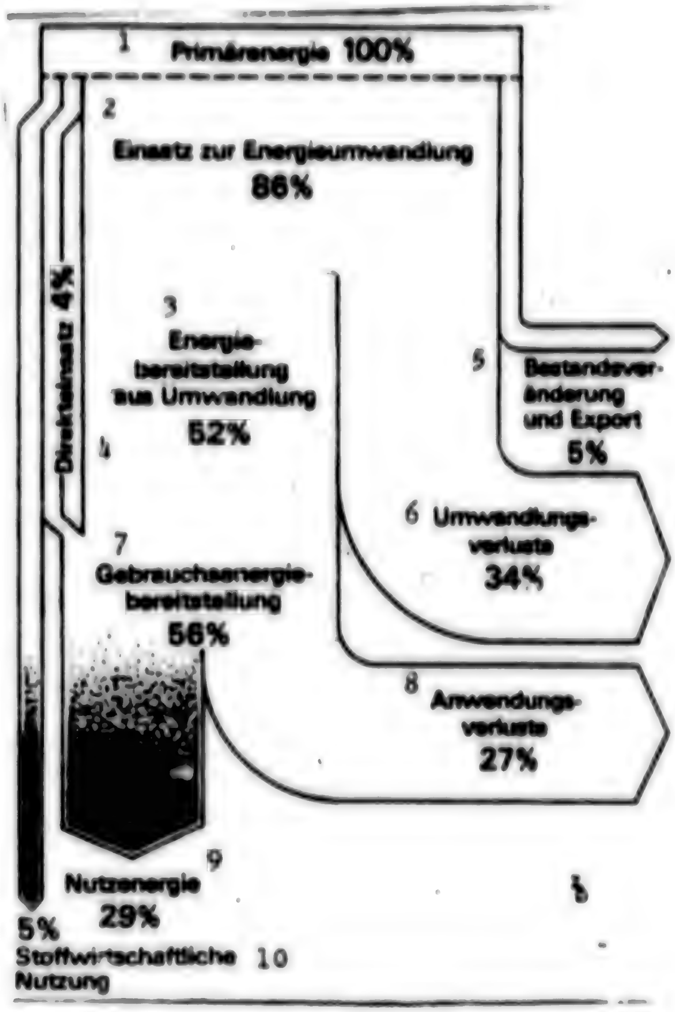
Economical energy utilization for space heating also calls for compliance with the adopted room temperatures. That must be ensured everywhere. Measurement and control of temperatures, expert regulation systems, use of precise operating curves, disciplined compliance with heating phases are just as indispensable for this purpose as the guarantee of the proper condition of the heating plants, including the proper functioning of the regulating valves [registers] on heating units. It is once again necessary to have all enterprises, government agencies, and public institutions investigate whether all prerequisites exist for proper space heating coupled with strict economy. This is important above all also for the health and well being of our citizens.

Reducing the Transportation Expenses

Fifteen percent of the national economy's energy requirements are taken up for transportation processes. Carburetor and diesel fuel are used mostly for this purpose. The most important thing here is the reduction of the transportation expenditure as such, the most efficient possible development of transportation, including the transportation structure, in order to use fuels as economically as possible. In 1980, considerable results were achieved as a result of the implementation of the resolutions. The transportation services were increased by 4.3 percent by the end of August and the use of diesel fuel was reduced by 4.4 percent compared to the same period of time the year before. This was possible above all because highway transportation was shifted to the railroads and to inland shipping.

But there are still great possibilities for savings in motor transport. In more than 3,000 inspected vehicles, technical and organizational shortcomings, exceeding the speed limit, and similar observations were made regarding 60 percent of the trucks. Among the trucks inspected, more than 500 were being driven without trailers.

It is also important to compare the same vehicle types with respect to fuel consumption. For example, we detect differences in vehicles of the same type in public and plant traffic in Halle and Dresden bezirks, amounting to as much as 45 percent; there is no justification whatsoever for that. Results of dispatcher stations which work in an exemplary fashion all show that--compared to the currently applicable guideline catalogue of the Ministry of Transportation--we are indeed achieving savings of up to 1.5 liter per 100 kilometers below the required level for passenger cars. The time has come to orient this standard catalogue to a greater extent by the optimum values actually attained.


1 Primärenergie 100%
2
Einsatz zur Energieumwandlung 86%
Direkteinsatz 4%
3 Energiebereitstellung aus Umwandlung 52%
4
5 Bestandsveränderung und Export 5%
6 Umwandlungsverluste 34%
7 Gebrauchsenergiebereitstellung 56%
8 Anwendungsverluste 27%
9 Nutzenergie 29%
5% Stoffwirtschaftliche Nutzung 10

1979 GDR Energy Flow Chart. Key: 1--Primary energy; 2--Utilization for energy conversion; 3--Energy supply from conversion; 4--Direct utilization; 5--Inventory change and exports; 6--Conversion losses; 7--Utility energy supply; 8--Application [utilization] losses; 9--Useful energy; 10--Utilization in materials industry [economy].

Growing Number of Exemplary Enterprises

The struggle for the title "Enterprise Working in an Exemplary Fashion in the Energy Industry" holds a considerable place in the endeavor to step up energy savings. More than 600 enterprises and installations have so far been able to win this title and they use 45 percent of industry's utilization energy. Starting in 1980, this title will also be awarded to cities and communities through the director of the Central Energy Commission for good results in energy-management work.

But the criteria for the attainment of this title will be pegged higher. Complying with government energy saving quotas, meeting rising production assignments with the same or lesser energy quantity, exemplary work with norms and high quality of products in terms of energy--these will carry greater weight in the award of these titles.

We will likewise not deviate from the basic principle to the effect that every enterprise which works in an exemplary fashion in the energy department must pass on the good lessons it learned within the branch and in the territory, the way in which, in Dresden Bezirk, in each kreis, an enterprise doing exemplary work in the energy department is doing active work as consultation base. We are concerned here with enterprises that do far more exemplary work in the energy department. We need optimum achievements not only in individual cases but across the board.

The development of enterprises and installations which work in an exemplary fashion in the energy department in community and social installations is still in its beginnings. Here at any rate we still take up 25 percent of the GDR's utility energy. Through the development of pilot enterprises for the maintenance and care of heating plants and BMSR equipment as well as burner adjustment in the bezirks and kreises, we must give even more effective support to the smaller enterprises and installations in these sectors in terms of the proper operations management and repair of their systems.

The most economical and the most rational possible energy utilization is of the utmost national economic and political significance and reveals a long-term and strategic character. This is something which the managers must more than ever before address themselves to. Let us be guided by past experience to the effect that knowledge regarding the interrelationships, regarding the national economic requirements on the part of every citizen, with a high level of technical knowledge, and at every work station, constitute those prerequisites from which will grow the kind of creative action, ingenuity, and high action readiness which we need.

Domestic Raw Brown Coal--Most Important Energy Source: From Speech by Wolfgang Mitzinger, Minister for Coal and Energy

[Text] Our concept for meeting the growing energy requirement of socialist society in the GDR starts with the consistent implementation of efficient energy utilization as well as the rapid increase in the output of raw brown coal. These new requirements also increasingly determine the action of the miners and energy workers in the combines, enterprises, and scientific installations of the coal and energy industry.

Considering everything that has to be done in the very near future, we must basically start with the idea that we must never and nowhere allow any kind of smug complacency. The conditions for a reliable energy supply are subjected to a high degree of dynamics. Something that is still sufficient today will no longer meet requirements tomorrow because the influence springing from the international market constantly confront us with new requirements which call for new decisions everyday regarding a reliable energy supply and a rapid response. There is only one way for us and that way is the increased use of raw brown coal.

Larger-Scale Substitution

The basic issue here is to meet the energy requirements to a much greater degree than so far planned on the basis of raw brown coal instead of hard coal and coke. Here is what that means: on the one hand, we must make available, for the producers, during the fourth quarter of 1980, solid fuels from our own production above and beyond the plan targets and above and beyond the competition pledges given so far. On the other hand, all energy consumers must, in addition to the tasks spelled out so far, regarding the substitution of heating oil and assorted energy hard coal, carry out additional measures with the support of the energy combines and the energy committees in the bezirks and kreises regarding the direct utilization of raw brown coal and, in special cases, also in case of admixtures of briquettes.

The main issue now is to make sure that, in all consumer areas, the use of raw brown coal will serve to release hard coal, coke, and briquettes without any reservations and that no time delay will be permitted here. The decisive thing thus is to make sure that the raw coal supply in each of the enterprises designated will actually be used in each installation specified.

There are already many enterprise collectives which are briskly using raw brown coal and which show us how the problems of raw brown [coal] extraction and screening-coal utilization can be mastered. These are enterprises in which this process is being directed correctly in political terms, enterprises where they long ago stopped discussing all of the "ifs" and "buts" and where they are instead tackling the tasks specifically. That was clearly brought out during a discussion in Leipzig on 17 September.

New Ways Opened Up

At the Erfurt-Rudisleben Chemical Systems Construction VEB, the swing-thrust grates in small water boilers were converted to raw brown coal by means of a change in the grate charging, the extension of the return plate, the increase in the swing frequency and the adjustment of the dumping height to the use of raw brown extraction and screening coal. Here they achieved almost the same performance parameters as during briquette firing. This system is now being carried out according to plan and the briquette quota was returned.

In Leipzig it was demonstrated just as convincingly that the use of screening coal on flat grates with stoker or manual charging is possible during heating-up with briquettes if the corresponding performance parameters are guaranteed. Here again, the necessary measures were documented in the information material released by the "Brown Coal Briquette Substitution through Raw Brown Coal" study group. The Leipzig Colored Yarn Works VEB were designated as consultation base.

The Harzer Works in Blankenburg successfully converted their steam generators from coke to screening coal and briquette firing. Measures designed to implement the admixture of raw brown coal for briquette-fired articulated boilers in the various versions were demonstrated just as clearly. This enterprise engaged in another initiative. A suspension grate with secondary air supply was developed and cleared for production for the GK 20 articulated boiler which in the past achieved its planned performance parameters only when coke was used; it now guarantees the use of brown coal briquettes with full heat yields. This grate will be sold during the fourth quarter of this year through the Household Appliances Wholesale Company in related retail stores. The initiative displayed by the personnel force at the Harzer Works in Blankenburg will help us better solve problems of coke supply for social installations and the population. This initiative must now be continued for the use of screened coal.

We are naturally not overlooking the fact that the measures adopted may be connected with more labor on the part of operating personnel and, to a certain extent, a decline in boiler output. In many cases we run into the problem of storage capacity, the ash yield is greater and we are also going to run into other problems. It is therefore all the more necessary to provide strict management for the newly determined use of solid fuels in political and technical-organizational terms through the general managers of the combines, the council chairmen, and the plant managers, down to the last boilerman and uncompromisingly to implement this measure coupled with the full discharge of the individual responsibility of the energy users.

Spread Good Experiences

I would like briefly to summarize the good lessons we have learned. First of all it is necessary to make sure that the managers will personally organize this substitution process and that the implementation of the resolutions adopted in this connection, as well as the central directives, will be strictly supervised.

Second, the best results are achieved wherever--on the basis of fundamental decisions of our party and government regarding fuel utilization--a broad mass initiative of the workers is organized in pursuit of the most economical utilization of energy sources spelled out in terms of quotas. The important thing here is to make sure that our own reserves will be tapped for conversion and for reconstruction of boiler plants for the new fuel and that we explain to the boilermen why we are establishing and must establish new tasks for them likewise.

Third, our past experience shows us that the implementation of the central basic government guideline for fuel utilization calls for effective support from the local councils and their energy committee. Starting with the organization of territorial storage and transportation processes, continuing by rigid control of quota implementation and especially raw coal utilization, all the way to passing on experiences and lessons learned--all of these are tasks which can be organized most effectively in the territories.

Fourth and not last, it is also important to organize bezirk initiatives to tap local fuel reserves. For example, the Schwerin Bezirk energy committe made determinations regarding the utilization of broken wood which is no longer technologically useful, of wood residues and stumps, instead of brown coal briquettes. We do not consider this to be an emergency solution. The utilization of this kind of wood and of local peat deposits must be developed into a lasting factor, especially for the local fuel supply of agriculture and forestry.

It is therefore necessary to make sure that the bezirk and kreis energy committees, in cooperation with the agriculture and forestry departments, will quickly prepare a survey of these reserves, organize their utilization, and consider the use of such local energy resources in dimensioning the fuel quotas. Suggestions from citizens confirm again and again that many unused reserves are still present in this field.

Only through a significant increase in the supply of fuels and energy from domestic resources, through the complete elimination of energy waste in all sectors of social life, and through the increased direct utilization of raw brown coal instead of heating oil, hard coal, coal, coke, and briquettes will it be possible for us to accomplish the tasks facing us.

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GERMAN DEMOCRATIC REPUBLIC

ENERGY CONSERVATION ACHIEVEMENTS REVIEWED, PROSPECTS OUTLINED

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[Commentary by Wolfgang Rauchfuss, member, SED Central Committee; deputy chairman, GDR Council of Ministers; minister for materials management: "How Is Energy Conservation Progressing?"]

[Text] Considerable progress has been made in the GDR in recent years in the implementation of efficient energy utilization and in the struggle for a high savings rate in connection with energy consumption on the basis of the resolutions of the Eighth and Ninth SED party congresses. In 1976-1979, for example, when we had an average annual primary energy consumption increase of only about 2.5 percent, we were able to achieve more than twice as high industrial commodity output growth rates. This is a considerable achievement even on an international scale.

The reduction rates for electric energy and utility energy intensity, which were given to the economy as requirements, were attained and partly topped. Accounting for energy consumption during the first half of 1980 shows an increase in primary energy consumption amounting to less than one percent coupled with an industrial commodity output growth rate of 6.1 percent. This proves again that the resolutions of the party and the government regarding efficient energy utilization and elimination of any energy waste are becoming increasingly effective.

The point of departure in the management and planning of energy-industry development in the GDR and for all other sectors of the national economy must be the observation by SED Central Committee Secretary-General Comrade Erich Honecker to the effect that both the starting positions and the essential conditions for future dynamic economic growth differ at the start of the eighties from the situation during the past decade. The GDR today faces two major tasks in the field of the energy industry.

First of all, it is necessary to guarantee dynamic economic growth during the 1981-1985 five-year plan with a considerably lower increase in annual primary energy consumption. This means that efficient energy utilization during the eighties must make a far greater contribution to guaranteeing the fuel and energy inventory than during the past decade.

Second, the increase in primary energy during that period of time must be achieved only on the basis of domestic raw brown coal--which is still our most important energy source--and, to a limited extent, by means of an increase in nuclear energy, coupled with simultaneous substitution of heating oil and assorted energy hard coal. To attain this goal it is necessary to produce the required equipment, such as steam generators, coaling and ash removal plants, etc., and to erect the necessary plants. These tasks create maximum requirements for science and technology and demand comprehensive investments.

The September 1979 resolution of the SED Central Committee Secretariat and the GDR Council of Ministers, entitled "On Efficient Utilization and Savings of Electrical Energy, Heat, Furnace and Engine Fuels as Well as the Elimination of any Waste in 1979," ushered in a new phase in the implementation of efficient energy utilization and economical employment of energy. Manifold initiatives were thus triggered in the combines, enterprises, and collectives. Many citizens submitted suggestions and provided hints as to economical and efficient energy use. Comprehensive measures for the elimination of energy waste and the tapping of reserves were taken in the enterprises of industry, the construction and transportation industries, agriculture, forestry, and the food industry, commerce, as well as educational installations, cultural facilities, and other sectors.

As a result, it was possible to relieve the electric energy and heat situations during the 1979-1980 winter semester by 6-8 percent; that meant that we were able to save considerable quantities of heating oil, gas, and solid fuels. That was a considerable contribution to steady energy supply in the GDR in the winter of 1979-1980.

To guarantee a better system and discipline connected with the economical utilization of energy in the economy, government quotas were issued in 1980 for the consumption of energy sources and the responsibility of the general managers of the combines for planning and accounting of energy sources--especially for the drafting and application of scientifically justified energy consumption norms--was increased. In this way we also better guaranteed uniform responsibility for production and energy consumption while at the same time we created better prerequisites for complex energy-industry work in the combines--the sort of thing that proves itself wherever we employ well-trained management personnel to accomplish energy-industry tasks and wherever we do not tolerate any narrow parochial approach to the work that has to be done. The lessons learned by such combines as the "Walter Ulbricht" Leuna Works--where the workers in socialist competition set themselves the target of guaranteeing output increase in 1980 already with less energy--should be applied in all combines and enterprises. The results and experiences of the workers at Leuna as well as the approximately 600 enterprises which in the meantime have received awards for exemplary energy-industry work constitute a good foundation for further successful energy-industry rationalization in all enterprises. The important thing is to help and support all collectives which have set themselves this task.

Through a combined effort with the ministries and combines, we drafted a "Concept for the Comprehensive Implementation of Rational Energy Use During the 1981-1985 Five-Year Plan." It starts with the idea that we must accomplish growing production tasks in many branches of the economy with the same energy quantities or with reduced energy utilization and at the same time replace imported energy sources--especially heating oil and assorted energy hard coal--with raw brown coal.

The concept comes up with specific assignments for the rationalization of the most important energy-industry processes, such as electric energy generation and transmission, heat energy generation and transmission, space heating, technological heating processes, transportation processes, as well as electric energy consumption during the most important processes. High targets have been established for each combine regarding energy rationalization and the energy effects to be attained have been spelled out. Each combine and each enterprise now faces the task of drafting its own rationalization concept which starts with the idea that the production increase must lastingly be guaranteed with the energy quantity used so far or with a smaller quantity. Today, questions of energy savings of a long-term and strategic nature. They demand long-term concepts, they must be thoroughly discussed in the collective and they demand clear decisions.

What should we concentrate our efforts on primarily in tapping energy reserves?

The drafting and consistent application of technically-economically justified energy consumption standards are of special importance. Here we still have backlogs and delays in connection with various products which must be eliminated quickly.

In implementing the enterprise rationalization concepts--which are supposed to concentrate, among other things, on the insulation of heat-conducting lines and fixtures, the reduction of condensate and compressed-air losses, the utilization of energy yield as such, especially from heat processes--we must start with the increased use of our own, in-house capacities, especially the rationalization equipment construction and building construction departments. The energy-industry targets for the development of new products, processes, and technologies must relentlessly be measured against international top-level standards. That is the only way we can make sure that the prerequisites for the reduction of specific energy consumption will be created along with the new product or method. We are helped in this effort if we apply even stricter criteria in the confirmation of energy consumption norms and specifications, if especially the planners, designers, and technologists are involved even more effectively into energy-industry work and are urged to display ingenuity in their work.

We still suffer considerable energy losses due to incorrect operations management, especially effective equipment and maintenance of MSR [measuring, control, and regulating technology] installations and inadequate skill levels on the part of operating personnel. The implementation of economical energy consumption inevitably demands an exactly functioning MSR equipment unit and a high level of know how among operating personnel. The requirement for this is the necessary equipment of the systems with MSR installations and constant and above all system-related skill training for operating personnel. The unity of knowledge, ability, and constructive action on the part of the workers who handle these systems with a high energy utilization rate is of extraordinary importance for efficient energy use.

The exact accounting of energy consumption both for individual subsystems and for enterprise divisions and combines constitutes an important foundation for the implementation of government energy policy and energy savings. A particular critical main point here involves compliance with technically-economically justified energy consumption standards and the derived government quotas for energy consumption. Monthly accounting of energy consumption must become a constant management task of the enterprises and combines--not only if energy consumption has been exceeded with penalties amounting to ten times the price.

It is in the interest of all of us if the objectives of socialist competition include, in the enterprises and combines, the technically-economically justified energy consumption norms, measures aimed at the substitution of high-grade imported energy sources, scientific-technical objectives regarding the development of new products, the accomplishment of selected rationalization measures by the required deadline and with the required quality, and compliance with government quotas. The important thing here is to assign accountable tasks to the teams, plant divisions, and enterprise personnel forces and to organize their specific accounting.

To increase social influence and to guarantee the democratic cooperation of the workers in the combines and enterprises we have formed energy aktivs. It is their task above all to discuss the monthly results of the accounting of government quotas for energy consumption and the implementation of the "Plan of Measures for Efficient Energy Use." The emphasis here is on complying with government quotas and using less than specified in the government quotas as well as supervision over the implementation of all points in the plan of measures along with a check on the effects regarding specific and absolute energy consumption. It is a matter of energy policy to come to grips with the implementation of important innovator proposals regarding efficient energy use and to support their rapid practical implementation. The high demands of the eighties regarding economical energy use and the significant output increase in the field of the energy economy as a whole call for effective work by management personnel with a high level of political and technical knowledge. At this time, available training capacities are not being fully utilized at all colleges and technical schools although the enterprises in some cases are having shortages of cadres, especially for the management of technological heat processes. In the future the enterprises and combines should develop greater initiatives regarding the training and detached duty assignments primarily of young skilled workers and above all to the Zittau Engineering College, the Freiberg Mining Academy, and the Markkleeberg Technical School. It is important to make sure that all universities, colleges, and technical schools fully utilize the possibilities for the basic and advanced training of personnel in fields of science in accordance with rising requirements.

The implementation of efficient and economical energy use also confronts the public with new and higher requirements. Critical main points here are the rapid and effective popularization of the experiences of the best workers, the imparting of new discoveries and insights into the energy policy of the GDR to all citizens of the country, combined with persuading people consciously to cooperate toward economical energy use in the individual sector. The dissemination of interesting and convincing examples of efficient energy utilization in the economy and the transmission of specific recommendations aimed at preventing energy losses at home must be continued with even higher quality in the press, on radio and television so that "energy saving" will be increasingly upbeat in the GDR as a result of the conscious cooperation of its citizens.

5058
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ECONOMIC REFORM ON HUNGARIAN MODEL CONSIDERED INADVISABLE

Warsaw KURIER POLSKI in Polish 19-21 Sep 80 p 3

[Interview with Dr Jan Mujzel of the Institute of Planning, Planning Commission of the Council of Ministers, by Jerzy Jagodzinski and Marek Rapacki]

[Text] "An indispensable factor for improving our economic situation and for a continual increase in management efficiency is the execution of broad changes in our methods of planning and management of the national economy. We are in the process of preparing a plan of comprehensive reform in this area." The above words come from a Sejm expose delivered by Premier Jozef Pinkowski on 5 September. The KURIER requested an interview on this subject with the distinguished specialist on problems of economic systems, Dr Jan Jujzel of the Institute of Planning, Planning Commission of the Council of Ministers.

[Question] Professor, the study of Polish economics is facing new, difficult, but exciting tasks...

[Answer] Often a little too much is expected from scholarly study. The study of the workings of the socialist economy is still in a state of infancy. Moreover, there are many aspects and problems of the system of operation of an economy about which research in general cannot make unequivocal judgments. These are those problems about which scholarly positions cannot help but include a value judgment. And it is known that value judgments belong to the category of subjective opinions. Consequently, it is only natural that the views of economists are diverse on these questions.

Our limited knowledge and the controversiality of views have always stood in the way of systems changes to a certain degree. The politicians faced decisions which were attended by many basic uncertainties, not only from an economic viewpoint, but also from a sociopolitical point of view.

[Question] But people have a right to ask why systems changes have been discussed for 25 years without visible results, don't they?

[Answer] Indeed, society is not happy with the operation of the traditional system of planned economy which was instituted in Poland at the end of the 1940's and the beginning of the 1950's. This system is sharply criticized in circles of professional economists and practitioners as well. Despite this we have not succeeded in extricating the economy from its logic. Two major attempts were made in the second half of the 1950's and in the first half of the 1970's, several lesser attempts were made in the interim. Unfortunately all of these were fundamental attributes of the traditional system.

[Question] And now we are embarking on a third great attempt?

[Answer] Let us say we would like to believe that we are moving toward our next attempt at dispensing with the traditional system. Our guiding principle is the hope that this time we will succeed notwithstanding numerous sceptics in various circles who hold that every such attempt must eventually run up against insurmountable obstacles in our situation and must finally end with a return to traditional methods.

Perhaps a science of economics which does not provide an unequivocal guidepost for progressive systems transformations is partly at fault. On the other hand, as many times as decisionmaking centers in Poland have seriously begun to tackle the problems of economic reforms, Polish economics and Polish social thought have furnished plans, ideas, and original, valuable analyses, all of which were not without certain defects.

A basic factor in the explanation of our failures is the fact that the system of operation of the economy is an extremely complex phenomenon and this is why its successful transformation demands a so-called comprehensive approach. This is extremely difficult because of the necessity of operating across an exceedingly broad range, not only in an economic sense, but also socially, politically and educationally, while taking into consideration a very large number of diverse connections, counterconnections and the like.

What is also very important is the circumstance that upon closer analysis it becomes evident that even when these connections occur in some form, as when they assume a technical-economic shape, for example in the sphere of a financial system, a price system or incentive solutions, what in fact is underlying is the sociopolitical content. To put it another way, there is no basic solution in a systems field which does not violate someone else's group interests, or which does not affect the sociopolitical structure, the methods of exercising authority and the role played by various groups and circles. And in this way a multitude of passions is created, each systems approach immediately provokes defensive moves on the part of the threatened groups, which are sometimes very influential. When such a state exists in society that progressive tendencies and forces manage to break down these obstacles, which are, after all, very human and completely natural, then the opportunity will arise to effect a really fundamental change in the economic system.

[Question] We would like to think that we presently have such a state at hand...

[Answer] On each previous occasion we observed an otherwise understandable tendency on the part of decisionmaking representatives to limit themselves to small steps, in order not to jump into the unknown perhaps, and as much as possible to activate other elements in the socioeconomic policy which could produce substitute effects in place of bolder tasks on the systems front. It became evident that this was an unsuccessful trend. Without bold enough systems changes, without mechanisms guaranteeing the efficient operation of the economy, other measures in economic policy, such as negotiating loans or submitting to growing inflation for the purpose of compelling dynamism are short term, deceptive solutions.

[Question] Very encouraging experiences in our camp are afforded by Hungary...

[Answer] Yes, I agree completely. It is difficult to overestimate the significance of the Hungarian reform. It is really the only example within the CEMA bloc of a successful, bold departure from a traditional system, the replacement of a directive-distributive model by a system in which elements of self-regulation, horizontal ties in the operation of the economy and releasing rank and file initiatives have been introduced and built in much more forcefully than in any other country. This does not mean that I am coming out in favor of imitating Hungarian solutions. I am of the opinion that under our conditions, particularly at present, this would not be good advice.

Certain problems encountered in the Hungarian experience would also have to be avoided. I will mention only two of these. The first: the choice of a managerial, relatively self-governing orientation. In principle the Hungarian reform began with a managerial orientation, but recently certain modifications have occurred in this regard. From the beginning, however, key positions and functions were entrusted to the managerial staff and the role of personnel in decisionmaking processes was not exploited.

In Poland the very situation that we have today predetermined in favor of the second, self-government orientation, in my opinion. Recent agreements and proposals carry far-reaching consequences for all forms of social participation in the operation of the economic system--not only the participation of trade unions, but also of workers' self-governments, national councils, the Sejm and other organs.

A second difference between the Hungarian experience and our experiments would relate to solutions in the field of organizational structures. The Hungarians have highly concentrated, highly monopolized organizational structures. These exist both in their industry and in other economic branches. Even they are not particularly enchanted with this anymore, and we should not remain insensitive to excessive concentration in our systems solutions either. It has been known for a long time, and Lenin wrote in his famous work on imperialism, that every monopoly is at its base the creation of a situation in which nonproductive income is collected. Whoever remains in a monopolistic situation can afford to be insensitive to the needs of management efficiency.

[Question] Is this to say that we would rather draw upon the assumptions of our own model developed during the years 1957-1959?

[Answer] Yes, I hold that the general directions of progressive systems solutions in Poland today are, generally, the same solutions which progressive political and social thought and mass movements outlined during the second half of the 1950's. Our research, of course, has progressed, but the continuity of progressive socio-economic thought is clear.

[Question] What is the significance of recent governmental decisions concerning, among other things, wages and prices, as well as the restructuring of a portion of our production to serve the needs of the market?

[Answer] Naturally price increases complicate the problem of restoring market equilibrium and in this way hamper the systems movement. On the other hand, an inefficient system is a factor which increases the lack of equilibrium.

The immediate attainment of the greatest effects regarding supply is indispensable for the improvement of equilibrium both in the presence of the rapid growth of nominal income and of price stabilizing actions. Consequently, out of social necessity the economic policy is undertaking efforts both externally, to procure additional supplies of the market goods and raw materials necessary for market production, and internally, where it appears that the primary emphasis will be directed toward so-called conversion, or transforming production, when possible, from investment production to production for the market and for export. Particular emphasis will surely be placed on those products and groups of products which are universally felt to belong to the basic components of the living standard. There are rational actions, but...

[Question] With regard to long-term policy only systems solutions can really be successful?

[Answer] Yes, because enormous efficiency reserves are hidden within systems solutions. They are inherent in the possibilities of the full utilization of our production apparatus, the size and quality of which have increased in recent years. They are inherent in the improved utilization of the talents of work crews and cadres, which are more educated and more intelligent than ever before; in the effective use of reserves embedded in our scientific research facilities, which are not productive enough today, but thanks to their intensive former expansion, nonetheless represent very valuable capital for the future.

Positive reserves are also inherent in the fact of the broad internationalization of our economy. While this creates various problems, it also opens up excellent possibilities for deriving the benefits of worldwide production.

With regard to the question of so-called negative reserves, they issue above all from the enormous amount of waste, which grows apace at every turn--the waste of materials, the waste of direct labor, of initiatives and of human ideas. Opportunities have been lost and continue to be lost and the economy is burdened, the reaction to new possibilities and to the needs of people is slow, formal institutions are punctilious with regard to the share of working people in steering the economy. Moreover, there is disintegration within the moral-social sphere.

[Question] But is there not evidence that the situation with regard to the above is of late not as deplorable as we have come to believe?

[Answer] Of course, but the element of optimistic improvement primarily affects only the working class, and of these only large industries.

[Question] What about the issue of the scope of the anticipated reform?

[Answer] In my opinion, it should only be as broad as we can afford under present difficult conditions. For this reason I believe that the reform should be gradually accomplished, in stages. I do not think that in our situation we can be oriented toward a solution in the form of a one-time operation, as in Hungary. Overcoming all of the pressures and imbalances in our economy must be a process...In the scenario of systems changes, roughly speaking, we should set the following course: the execution of a systems movement coordinated with a series of regulatory tasks in socioeconomic policy; as a results of these measures a certain improvement in the market situation follows and puts us in a position to execute the next systems step, which, together with the accompanying actions, produces further positive results for economic equilibrium. And so, by executing these moves as if in "shifts" in the systems field and in other fields, we will be able to complete a progressive restructuring over a period of time.

[Question] And what should the concrete points of departure be? Can they be decisions handed down by premier Pinkowski on such matters as the question of the growth of autonomy of enterprises?

[Answer] In my opinion the principal points of departure are three. First, despite appearances there is the strengthening and social rationalization of central management. This does not mean an increase in directives addressed to economic units. The second point relates to the broader independence of enterprises. In my opinion, we will have to exploit the enterprise as the basic link of the system, the elementary organizational unit of rational management. As its autonomy is broadened, it should be made the primary agent of efficiency. We are becoming more and more acutely aware that the lack of rationality and initiative at the level of this basic unit cannot be replaced with the help of any sort of action from the top.

The third matter is the entire broad social dimension of the problem. To put it another way, the expansion of the share of society, of working people in various sectors in undertaking and implementing decisions in the whole economic process. These are perhaps are three mainstays on which the concept of a new system of economic operation must be based.

[Question] Are the problems of price regulation, of the creation of the appropriate price mechanism, a separate complex of issues?

[Answer] It is perhaps not a separate group, since these problems are intimately involved with the three main subject areas of reform of which I spoke above. The principal changes in the price area would have to be a sine qua non for the introduction of new systems solution in those areas. In the system which--I would like to believe--we will consistently develop, prices should play the role of the basic parameter controlling the more and more autonomous decisions of enterprises, as well as a factor rationalizing central decisions.

The views that it is possible, by employing models of comprehensive planning, to arrive at the optimal solutions, virtually disregarding prices or using stipulated prices, have not withstood the test of time. The present system of prices with its numerous disproportions continues to be very bad; it does not provide true cost-effectiveness parameters, and consequently is lacking in the basic data for rational economic decisionmaking. It would enormously complicate the expansion of the powers of enterprises to make such decisions.

Actions on the price front cannot but be numerous, difficult to undertake, and very comprehensive all at once, since there are many areas of pricing--retailing, materials supply, foreign trade, procurement and various other prices as well. All of these areas are very specific, but at the same time they are linked through the principle of communicating vessels. Probably one of the most important issues should be restoring the health of the prices of supply for the means of production, which are widely separated from objective conditions today. Fortunately preparations are already underway for actions to rationalize this sphere of price ratios.

[Question] And what of the whole picture of preparations for systems changes?

[Answer] In the near future, groups of experts, decisionmaking teams and staff teams will be called together for the purpose of carrying out conceptual work. Among these people will be politicians, persons in the economics field and scholars. The approach of the authorities to these preparatory activities is ambitious and broad; the overall effort is being directed, as you know, by the chairman of the Council of Ministers. The first "packet" of changes is forecast for 1981.

The announcement that a plenary meeting of the PZPR Central Committee was devoted to the subject of systems changes says a great deal.

Work continues on the plans for a series of laws, which are to be voted on shortly by the Sejm. They will be laws concerning trade unions, workers self-government, and enterprises, and will perhaps include a law on planning. These legal documents, one way or another, have surely already become the expression of a broader concept of the systems changes about which we have spoken.

[Question] The role of the Sejm is visible here, is it not...

[Answer] In speaking of the social rationalization of central management, as one of the mainstays of the whole philosophy of reform, I had in mind the role element executing the selection of the major social tasks and proportions, and then effectively enforcing the execution of its decisions, the social rationalization of central management is impossible to achieve in our system.

[Question] Just as social rationalization at a lower level necessitates the setting in motion of a real self-government...

[Answer] Of course, they are symmetrical. What is needed, however, are conditions of intensive efforts for activating former and new mechanisms of operation of the self-government factor, the social factor, the partnership factor with reference to managers, of central strategists and successive economic decisions. Only then will Polish reform be able to become what it should be...

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POLAND

LONG-RANGE FERTILIZER PRODUCTION, UTILIZATION OUTLINED

Warsaw ZYCIE GOSPODARCZE in Polish No 43, 26 Oct 80 pp 8, 9

[Article by Lech Froelich: "Fertilize and Store"]

[Text] In the opinion of farmers, as confirmed by scientific research, mineral (chemical) fertilizers cause harvesting yields to increase by as much as 60 percent. Fertilization is a necessary but insufficient factor. We have written repeatedly on this subject, as we shall revert to it. In this article we shall chiefly attempt to answer the question of what is the state of the supply of chemical means of production to agriculture.

Fertilizers

The revised 1980 plan provides for a fertilizer output consisting of 1,28 million tons of nitrogenous fertilizers (in terms of the pure ingredient N_2), 845,000 tons of phosphoric fertilizers (in terms of P_2O_5). In the first half of the year the chemical industry produced 641,000 tons of nitrogenous fertilizers, or a little more than 50 percent. It thus should produce 320,000 tons each during the remaining third and fourth quarters in order to meet the planned targets. Despite strikes and emergency stoppages in certain factories--in Wloclawek a production section has been shut down for longterm repairs--in the third quarter our output will fall about 318,000 tons short of the goal, but this shortage can be offset if an adequate supply of raw materials is assured. This concerns chiefly gas, and coal too. If the chemical industry is provided with gas, and if fertilizer production is indeed to be given priority, the industry can fulfill the plan-set targets for nitrogenous fertilizer output.

As regards phosphoric fertilizers, the plan for this year specifies 845,000 tons in terms of P_2O_5. In the first half of the year 449,000 tons, or more than one-half, has been produced. Some 200,000 tons are yet to be produced during each of the third and fourth quarters. The fulfillment of these seemingly easier tasks may, however, be difficult. The plants in Police and Gdansk, though located in the neighborhood of seaports, underwent stoppages owing to strikes, while the plants in Lubon, Ubocze, and Bonarka had production shortfalls owing to lack of phosphoric raw materials, which stayed on board ships. Thus the problem is to deliver these raw materials as soon as possible to those plants and to assure their most efficient and smooth operation until the end of the year.

Chemical industry men comment that this does not, of course, mean that this output and these supplies satisfy completely the demand of agriculture. Farmers always want more. But chemical industry as a producer is bound by the plan. But in their capacity as citizens, chemical industry men are concerned about the manner in which agriculture utilizes chemicals--fertilizers, crop protectants, feed supplements, premixes, vitamins, and antibiotics.

It is obvious besides that chemical industry has other vital tasks to accomplish in addition to helping agriculture. Hence, the necessary developmental proportions in the structure of that industry must be maintained. In the last 15 years (1963-1978) the supply of chemical fertilizers (NPK) [nitrogen, phosphorus, and potassium] to agriculture has grown from 56.4 to 190.3 kg per hectare, that is, by a factor of 3.5 times. This has required considerable investment outlays. It is estimated that in view of the considerable capital-intensiveness of investments in the nitrogenous and phosphoric fertilizers industry every additional kilogram of these fertilizers per hectare on the nationwide scale requires 1.5 billion zlotys in investments in the fertilizer industry! How were these fertilizers utilized? In the last 15 years the average grain harvest increased by a factor of 1.6 times; the potato harvest, by a factor of 1.3; and the sugar beet harvest, by a factor of only 1.1.

As for potassic fertilizers, we import them. Until 1978 it was thought that we had a surplus of potash, and dumps of potash salt had lain on depots of state farms and PR. Scientists have shown that the proper proportions between the supply and application of nitrogen (N_2), phosphorus (P_2O_5) and potassium (K_2O) should be 1:0.8:1.2. Agriculture in 1980 will receive enough fertilizers to reach the ceiling of 192 NPK per hectare of arable land. This is much less than envisaged in the 1973 Program for the Chemicalization of the National Economy, and less than the 1976-1980 Five-Year Plan. Even so, however, during the 1973-1980 period application of chemical fertilizers will have increased by 26.5 kg per hectare.

An Exchange of Views

Between chemical industry and agriculture a fairly lively exchange of opinions occurs on the manner in which fertilizer production should develop in the next few years and on the amount of fertilizers that should be given to agriculture in order to attain the anticipated harvests. Agriculture (in its postulates of August 1980) expects the fertilizer industry to develop on a scale assurinf the supply of 1.8 million tons of N_2, 1.2 million tons of P_2O_5 and 170,000 tons of K_2O to agriculture by the year 1985; altogether this amounts to 4.7 million tons of fertilizers and it would serve to improve the degree of fertilization by 58 kg per hectare compared with the current year, that is, to raise the level of fertilization to 250 kg NPK per hectare.

The Ministry of Chemical Industry is very optimistic about the possibility of raising the level offertilization fo 230 kg per hectare in 1985, that is, by 38 kg more per hectare than at present. The supplies would then amount to 1.7 million tons of N_2, 1.1 million tons of P_2O_5 and 1.55 million tons of K_2O, or a total of 4.35 million tons. Assuming that every additional kilogram of fertilizers per hectare on the national scale costs 1.5 billion zlotys in investment outlays, the implementation of such a program would cost 57 billion zlotys! At any rate, more than 50 billion zlotys. This year the Ministry of Chemical Industry expects to spend 7.6 billion zlotys(including 2.2 billion zlotys on the [fertilizer plant] in Police) on all investments relating to the food economy.

Farmers base their claims on the following arguments: the lower fertilizer output and smaller application doses proposed by the chemical industry will result in an application shortfall of 1.46 million tons of fertilizers during the 1981-1985 period. Since it is recognized that each additional kilogram of fertilizers applied per hectare results in a average increase of 6 kg in grain harvest per hectare, the overall grain harvest during that 5-year period will be 8.7 million tons lower, or on the average 1.7 million tons lower each year!

This reasoning cannot, however, be accepted without law of diminishing returns reservations. A certain degression rather than direct proportion exists between the increase in amount of chemical fertilizers applied and the increase in yields. Thus, it is believed that for the first 100 kg NPK applied per hectare every 1 kg applied results in an increase of 5.8 kg in grain yields, but within the 100-200 kg per hectare range every kg applied results in an increase of only 3.5 kg in grain yields, while within the intensive 200-300 kg per hectare range every kg applied results in an increase of only 2.0 kg in grain yields, so that achieving higher harvests in this way becomes increasingly costly. Moreover, the calculations of "decrease" and "increase" in yields should be limited to the approximately 14.6 million bectares of tilled land alone, rather than covering the whole of arable lands--about 19 million hectares.

If agriculture in 1985 were to receive 38 kg NPK per hectare more than it does at present, it should harvest 228 kg of grain more per hectare, or more than 4.3 million tons on the national scale.

Crop Protectants

Will chemical industry supply them in the quantities needed?

Since the production of crop protectants is to some extent based on imported semi-finished products or concentrates of the active substance, their supply is lower than the demand of agriculture. The extent of satisfaction of that demand as regards herbicides and fungicides is estimated at 40-50 percent. Although there are quite a few original new technological solutions and even design documents on the shelves of institutes, the program for developing the pesticide base has been imprlemented only minimally. It had been expected that 6 billion zlotys would be spent for that purpose during 1976-1980, but only 600 million has been spent.

Moreover, a "humorous" dialogue between chemical industry and agriculture recurs every year. Farmers need crop protectants for the brief spring-summer vegetation season and it is always then that they clamor about the scarcity of these chemicals. On the other hand, it must be borne in mind that most of the chemical industry's production facilities operate continuously and without any large margin of reserve. Thus during individual months and quarters of the year the scale of output and supply does not vary much. Farmers demand multiplied deliveries during the several "active" months. The crop protectant factories, which operate more or less smoothly throughout the year, can only provide about one-twelfth of annual deliveries each month. Hence this relationship between "smooth" production and "activity" of utilization of crop protectants should be taken into account in the system for receiving orders and purchases.

This year, during the period of its "action" [drive]--because the drive for combatting pests and weeds begins and ends at definite periods--agriculture received 99 percent of the plan-envisaged potato beetle pesticides, 112 percent of grain herbicides, 105 percent of sugar beet herbicides, 95 percent of corn herbicides, and only 55 percent rape pesticides. It should be noted, however, that this year climate anomalies and floods destroyed large areas planted with rape which had to be plowed back, so that the demand for rape crop protectants has diminished. As for the supply of crop protectants for orchards, it reached 105 percent.

For a long time now opinions have been differing about whether priority should be given to fertilization, that is, to yield-increasing operations, or to a broader application of preparations reducing losses and protecting the harvests on the field and in granaries and silos.

Last year the aggregate harvest of the four cereals amounted to 15.3 million tons, reaching 27.7 billion zlotys in value. When applied in accordance with the rules of agrotechnology, crop protectants reduce harvest losses by 10-15 percent, which means that it is possible to gain at least 1.5 billion tons more of grain having a value of nearly 3 billion zlotys. The cost of producing crop protectants (or importing them) or the eventual investment outlays on the construction or expansion of the necessary facilities is much lower than in the artificial fertilizers industry. This also applies to the so-called preservatives--preparations serving to protect what has already been grown. In this country storage losses reach 15-20 percent. These figures should serve as a basis for answering whether investments should be concentrated in the capital-intensive and energy-intensive production of fertilizers or whether the needed increases in yields should be achieved in another way. By eliminating these storage losses we could gain at least 3 million tons of grain annually. This does not, of course, mean thta the chemical industry's fertilizer program should be abandoned. It is simply that both possibilities should be borne in mind.

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